

Appendix A-D

Laboratory Reports and
Chain of Custody
Documentation

Appendix A-D Laboratory Reports and Chain of Custody Documentation

19

Peter Ravlic

From: [REDACTED]
Sent: Thursday, 6 December 2018 9:42 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: ON HOLD - EM1819548 - AECOM 60582811 GJPP Groundwater Study

Hi [REDACTED]

Sebastien noted that he took soil sample QC200_041218, however, forgot to include in the COC. Can you please kindly check whether the bottle was sent to lab?

Also, can you please change the following sample IDs?

- QC501_041218 to QC502_041218
- QC502_041218 to QC503_041218

For analysis, please analyse:

CPT_MW14_031218_0.2 = IWRG621
CPT_MW14_031218_1.0 = IWRG621
CPT_MW10_031218_0.2 = IWRG621
CPT_MW10_031218_2.5 = IWRG621
CPT_MW10_031218_0.5 = SPOCAS
CPT_MW10_031218_3.0 = SPOCAS
CPT_MW05_041218_0.2 = IWRG621
CPT_MW05_041218_2.0 = IWRG621
CPT_MW18_041218_0.5 = IWRG621
CPT_MW18_041218_4.0 = IWRG621
CPT_MW19_041218_0.2 = IWRG621
CPT_MW19_041218_2.0 = IWRG621
QC100_031218 = IWRG621
QC300_031218 = IWRG621 water equivalent
QC400_031218 = TPH(C6-C9)/BTEXN
QC500_031218 = TPH(C6-C9)/BTEXN
QC501_031218 = TPH(C6-C9)/BTEXN
QC301_041218 = IWRG621 water equivalent
QC401_041218 = TPH(C6-C9)/BTEXN
QC502_041218 = TPH(C6-C9)/BTEXN
QC503_041218 = TPH(C6-C9)/BTEXN
QC200_041218 = IWRG621 (Triplicate, please forward to Eurofins)

6/12
Mark B
MB
#631945

At standard TAT. Thanks.

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

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From: [REDACTED]
Sent: Wednesday, 5 December 2018 11:32 AM

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM PROJECT NUMBER & TASK: CO 60582811 RESULTS REQUIRED (Date): FOR LABORATORY USE ONLY COOLER SEAL (if not appropriate): Inlet: Yes No N/A SAMPLE TEMPERATURE: CHILLED: Yes No		ADDRESS / OFFICE: SITE: CLAPP Groundwater Study P.O. NO.: QUOTE NO.: EN/09619 COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	
SAMPLE INFORMATION (note: S = Soil, W=Water) ALS ID: SAMPLE ID: MATRIX: DATE: Time: Type / Code: Total bottles:		CONTAINER INFORMATION HOLD	
1 CPT-MW14-031218-0.2 S 031218 151B X		HOLD	
2 CPT-MW14-031218-0.5 3 CPT-MW14-031218-1.0 4 CPT-MW14-031218-1.5 5 CPT-MW14-031218-2.0 6 CPT-MW14-031218-2.5 7 CPT-MW14-031218-3.0 8 CPT-MW14-031218-3.5 9 CPT-MW14-031218-4.0 10 CPT-MW14-031218-4.2 11 CPT-MW14-031218-4.5 12 CPT-MW14-031218-4.8 13 CPT-MW14-031218-5.0 14 CPT-MW14-031218-5.5 15 CPT-MW14-031218-6.0 16 CPT-MW14-031218-6.5 17 CPT-MW14-031218-7.0 18 CPT-MW14-031218-7.5 19 CPT-MW14-031218-8.0		151B X HOLD	
RELINQUISHED BY: Name: Scott Date: 5/12/18 Of: AS Time: 14:00		RECEIVED BY: Name: Name Date: 4/12 Of: AS Time: 14:00	
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; ST = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic V = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag Soil Container Codes: Jar = Unpreserved glass jar		Notes: e.g. Highly contaminated sample e.g. "High PABs expected" Extra volume for QC or trace LORs etc	

Please freeze Bags for Acid Sulfate.

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**
Contact name: [REDACTED]
Project name: **GIJPP GROUNDWATER STUDY**
Project ID: **60582811**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Dec 6, 2018 3:20 PM**
Eurofins | mgt reference: **631945**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 6.8 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : +61 3 8564 5000 or by e.mail: [REDACTED]@eurofins.com

Results will be delivered electronically via e.mail to [REDACTED]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report 631945-S
Project name GIJPP GROUNDWATER STUDY
Project ID 60582811
Received Date Dec 06, 2018

Client Sample ID			QC200_041218
Sample Matrix			Soil
Eurofins mgt Sample No.			M18-De09387
Date Sampled			Dec 03, 2018
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
Volatile Organics			
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Volatile Organics			
1,1-Dichloroethane	0.5	mg/kg	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5

Client Sample ID			QC200_041218
Sample Matrix			Soil
Eurofins mgt Sample No.			M18-De09387
Date Sampled			Dec 03, 2018
Test/Reference	LOR	Unit	
Volatile Organics			
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	108
Toluene-d8 (surr.)	1	%	93
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			QC200_041218
Sample Matrix			Soil
Eurofins mgt Sample No.			M18-De09387
Date Sampled			Dec 03, 2018
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	65
p-Terphenyl-d14 (surr.)	1	%	50
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
α-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
β-BHC	0.05	mg/kg	< 0.05
δ-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
γ-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorodate (surr.)	1	%	53
Tetrachloro-m-xylene (surr.)	1	%	76
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1

Client Sample ID			QC200_041218
Sample Matrix			Soil
Eurofins mgt Sample No.			M18-De09387
Date Sampled			Dec 03, 2018
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls			
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchloredate (surr.)	1	%	53
Tetrachloro-m-xylene (surr.)	1	%	76
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	72
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride	100	mg/kg	120
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.8
% Moisture	1	%	26
Heavy Metals			
Arsenic	2	mg/kg	7.8
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	23
Copper	5	mg/kg	19
Lead	5	mg/kg	24
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	12
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	6.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Dec 11, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Dec 11, 2018	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Dec 11, 2018	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Dec 11, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Dec 11, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Dec 11, 2018	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Dec 11, 2018	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Dec 11, 2018	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Dec 11, 2018	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Dec 11, 2018	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Dec 13, 2018	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Dec 11, 2018	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Dec 13, 2018	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Dec 12, 2018	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Dec 11, 2018	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Dec 08, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008
Project Name: GIJPP GROUNDWATER STUDY
Project ID: 60582811

Order No.:
Report #: 631945
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Dec 6, 2018 3:20 PM
Due: Dec 13, 2018
Priority: 5 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IW/RG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	QC200_041218	Dec 03, 2018		Soil	M18-De09387	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPa, PFHx, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
1,2,4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1,1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1,1,1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,1,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,3,5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1,2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1,3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	103			70-130	Pass	
TRH C10-C14	%	84			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	78			70-130	Pass	
1.1.1-Trichloroethane	%	105			70-130	Pass	
1.2-Dichlorobenzene	%	108			70-130	Pass	
1.2-Dichloroethane	%	110			70-130	Pass	
Benzene	%	108			70-130	Pass	
Ethylbenzene	%	112			70-130	Pass	
m&p-Xylenes	%	107			70-130	Pass	
Toluene	%	112			70-130	Pass	
Trichloroethene	%	99			70-130	Pass	
Xylenes - Total	%	108			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	100			70-130	Pass	
TRH C6-C10	%	106			70-130	Pass	
TRH >C10-C16	%	86			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	89			70-130	Pass	
Acenaphthylene	%	87			70-130	Pass	
Anthracene	%	92			70-130	Pass	
Benz(a)anthracene	%	79			70-130	Pass	
Benzo(a)pyrene	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	%	84			70-130	Pass	
Benzo(g,h,i)perylene	%	72			70-130	Pass	
Benzo(k)fluoranthene	%	73			70-130	Pass	
Chrysene	%	84			70-130	Pass	
Dibenz(a,h)anthracene	%	76			70-130	Pass	
Fluoranthene	%	84			70-130	Pass	
Fluorene	%	89			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	75			70-130	Pass	
Naphthalene	%	89			70-130	Pass	
Phenanthrene	%	92			70-130	Pass	
Pyrene	%	91			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	107			70-130	Pass	
4,4'-DDD	%	102			70-130	Pass	
4,4'-DDE	%	89			70-130	Pass	
4,4'-DDT	%	89			70-130	Pass	
a-BHC	%	79			70-130	Pass	
Aldrin	%	81			70-130	Pass	
b-BHC	%	83			70-130	Pass	
d-BHC	%	100			70-130	Pass	
Dieldrin	%	90			70-130	Pass	
Endosulfan I	%	82			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	%	88			70-130	Pass	
Endosulfan sulphate	%	115			70-130	Pass	
Endrin	%	79			70-130	Pass	
Endrin aldehyde	%	89			70-130	Pass	
Endrin ketone	%	112			70-130	Pass	
g-BHC (Lindane)	%	83			70-130	Pass	
Heptachlor	%	86			70-130	Pass	
Heptachlor epoxide	%	94			70-130	Pass	
Hexachlorobenzene	%	91			70-130	Pass	
Methoxychlor	%	113			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	88			30-130	Pass	
2,4-Dichlorophenol	%	90			30-130	Pass	
2,4,5-Trichlorophenol	%	71			30-130	Pass	
2,4,6-Trichlorophenol	%	95			30-130	Pass	
2,6-Dichlorophenol	%	82			30-130	Pass	
4-Chloro-3-methylphenol	%	85			30-130	Pass	
Pentachlorophenol	%	87			30-130	Pass	
Tetrachlorophenols - Total	%	117			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	%	92			30-130	Pass	
2-Methyl-4,6-dinitrophenol	%	121			30-130	Pass	
2-Methylphenol (o-Cresol)	%	90			30-130	Pass	
2-Nitrophenol	%	86			30-130	Pass	
2,4-Dimethylphenol	%	81			30-130	Pass	
2,4-Dinitrophenol	%	103			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	81			30-130	Pass	
4-Nitrophenol	%	114			30-130	Pass	
Dinoseb	%	86			30-130	Pass	
Phenol	%	86			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	96			70-130	Pass	
Cyanide (total)	%	100			70-130	Pass	
Fluoride	%	113			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	105			80-120	Pass	
Cadmium	%	97			80-120	Pass	
Chromium	%	120			80-120	Pass	
Copper	%	108			80-120	Pass	
Lead	%	117			80-120	Pass	
Mercury	%	111			75-125	Pass	
Molybdenum	%	102			80-120	Pass	
Nickel	%	109			80-120	Pass	
Selenium	%	106			80-120	Pass	
Silver	%	102			80-120	Pass	
Tin	%	114			80-120	Pass	
Zinc	%	107			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	M18-De13549	NCP	%	109		70-130	Pass	
TRH C10-C14	M18-De09468	NCP	%	86		70-130	Pass	
Spike - % Recovery								
Volatile Organics				Result 1				
1.1-Dichloroethene	M18-De13549	NCP	%	78		70-130	Pass	
1.1.1-Trichloroethane	M18-De13549	NCP	%	88		70-130	Pass	
1.2-Dichlorobenzene	M18-De13549	NCP	%	96		70-130	Pass	
1.2-Dichloroethane	M18-De13549	NCP	%	94		70-130	Pass	
Benzene	M18-De13549	NCP	%	94		70-130	Pass	
Ethylbenzene	M18-De13549	NCP	%	102		70-130	Pass	
m&p-Xylenes	M18-De13549	NCP	%	95		70-130	Pass	
o-Xylene	M18-De13549	NCP	%	102		70-130	Pass	
Toluene	M18-De13549	NCP	%	100		70-130	Pass	
Trichloroethene	M18-De13549	NCP	%	88		70-130	Pass	
Xylenes - Total	M18-De13549	NCP	%	98		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	M18-De13549	NCP	%	85		70-130	Pass	
TRH C6-C10	M18-De13549	NCP	%	104		70-130	Pass	
TRH >C10-C16	M18-De09468	NCP	%	88		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	M18-De13698	NCP	%	106		70-130	Pass	
Acenaphthylene	M18-De13698	NCP	%	106		70-130	Pass	
Anthracene	M18-De13698	NCP	%	123		70-130	Pass	
Benz(a)anthracene	M18-De13698	NCP	%	120		70-130	Pass	
Benzo(a)pyrene	M18-De13698	NCP	%	101		70-130	Pass	
Benzo(b&j)fluoranthene	M18-De13698	NCP	%	98		70-130	Pass	
Benzo(g,h,i)perylene	M18-De13698	NCP	%	70		70-130	Pass	
Benzo(k)fluoranthene	M18-De13698	NCP	%	85		70-130	Pass	
Chrysene	M18-De13698	NCP	%	117		70-130	Pass	
Dibenz(a,h)anthracene	M18-De13698	NCP	%	84		70-130	Pass	
Fluoranthene	M18-De13698	NCP	%	121		70-130	Pass	
Fluorene	M18-De13698	NCP	%	115		70-130	Pass	
Indeno(1,2,3-cd)pyrene	M18-De13698	NCP	%	81		70-130	Pass	
Naphthalene	M18-De13698	NCP	%	99		70-130	Pass	
Phenanthrene	M18-De13698	NCP	%	125		70-130	Pass	
Pyrene	M18-De13698	NCP	%	122		70-130	Pass	
Spike - % Recovery								
Organochlorine Pesticides				Result 1				
Chlordanes - Total	K18-De01322	NCP	%	76		70-130	Pass	
4,4'-DDD	K18-De01322	NCP	%	110		70-130	Pass	
4,4'-DDE	K18-De01322	NCP	%	92		70-130	Pass	
4,4'-DDT	K18-De01322	NCP	%	103		70-130	Pass	
a-BHC	K18-De01322	NCP	%	96		70-130	Pass	
Aldrin	K18-De01322	NCP	%	88		70-130	Pass	
b-BHC	K18-De01322	NCP	%	76		70-130	Pass	
d-BHC	K18-De01322	NCP	%	77		70-130	Pass	
Dieldrin	K18-De01322	NCP	%	104		70-130	Pass	
Endosulfan I	K18-De01322	NCP	%	83		70-130	Pass	
Endosulfan II	K18-De01322	NCP	%	95		70-130	Pass	
Endosulfan sulphate	K18-De01322	NCP	%	108		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	K18-De01322	NCP	%	71			70-130	Pass	
Endrin ketone	K18-De01322	NCP	%	110			70-130	Pass	
g-BHC (Lindane)	K18-De01322	NCP	%	98			70-130	Pass	
Heptachlor epoxide	K18-De01322	NCP	%	93			70-130	Pass	
Hexachlorobenzene	K18-De01322	NCP	%	122			70-130	Pass	
Methoxychlor	K18-De01322	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M18-De13144	NCP	%	121			30-130	Pass	
2,4-Dichlorophenol	M18-De13144	NCP	%	127			30-130	Pass	
2,6-Dichlorophenol	M18-De13144	NCP	%	117			30-130	Pass	
4-Chloro-3-methylphenol	M18-De13144	NCP	%	117			30-130	Pass	
Pentachlorophenol	M18-De13144	NCP	%	95			30-130	Pass	
Tetrachlorophenols - Total	M18-De13144	NCP	%	120			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4,6-dinitrophenol	M18-De13144	NCP	%	60			30-130	Pass	
2-Methyl-4,6-dinitrophenol	M18-De13144	NCP	%	93			30-130	Pass	
2-Methylphenol (o-Cresol)	M18-De13144	NCP	%	125			30-130	Pass	
2-Nitrophenol	M18-De13144	NCP	%	119			30-130	Pass	
2,4-Dimethylphenol	M18-De13144	NCP	%	113			30-130	Pass	
2,4-Dinitrophenol	M18-De13144	NCP	%	74			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M18-De13144	NCP	%	130			30-130	Pass	
4-Nitrophenol	M18-De13144	NCP	%	86			30-130	Pass	
Dinoseb	M18-De13144	NCP	%	92			30-130	Pass	
Phenol	M18-De13144	NCP	%	126			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M18-De13299	NCP	%	97			70-130	Pass	
Cyanide (total)	M18-De13138	NCP	%	116			70-130	Pass	
Fluoride	M18-De09340	NCP	%	78			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-De09641	NCP	%	93			75-125	Pass	
Cadmium	M18-De09641	NCP	%	93			75-125	Pass	
Chromium	M18-De09641	NCP	%	96			75-125	Pass	
Copper	M18-De09641	NCP	%	90			75-125	Pass	
Lead	M18-De09641	NCP	%	94			75-125	Pass	
Mercury	M18-De09641	NCP	%	93			70-130	Pass	
Molybdenum	M18-De09641	NCP	%	98			75-125	Pass	
Nickel	M18-De09641	NCP	%	94			75-125	Pass	
Selenium	M18-De09641	NCP	%	92			75-125	Pass	
Silver	M18-De09641	NCP	%	99			75-125	Pass	
Tin	M18-De09641	NCP	%	102			75-125	Pass	
Zinc	M18-De09641	NCP	%	86			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M18-De13548	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M18-De09467	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M18-De09467	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M18-De09467	NCP	mg/kg	< 50	< 50	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.2.4-Trichlorobenzene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Hexachlorobutadiene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.1-Dichloroethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1-Dichloroethene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.1-Trichloroethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.1.2-Tetrachloroethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.2-Trichloroethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.2.2-Tetrachloroethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dibromoethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichlorobenzene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloroethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloropropane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.3-Trichloropropane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.4-Trimethylbenzene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichlorobenzene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichloropropane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3.5-Trimethylbenzene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.4-Dichlorobenzene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Butanone (MEK)	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Propanone (Acetone)	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chlorotoluene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Methyl-2-pentanone (MIBK)	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Allyl chloride	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzene	M18-De13548	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Bromobenzene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromochloromethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromodichloromethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromoform	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromomethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon disulfide	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon Tetrachloride	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chlorobenzene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroform	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloromethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.2-Dichloroethene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.3-Dichloropropene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromochloromethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromomethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dichlorodifluoromethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Ethylbenzene	M18-De13548	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Iodomethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Isopropyl benzene (Cumene)	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
m&p-Xylenes	M18-De13548	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methylene Chloride	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
o-Xylene	M18-De13548	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Styrene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Toluene	M18-De13548	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
trans-1.2-Dichloroethene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1.3-Dichloropropene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
Trichlorofluoromethane	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Xylenes - Total	M18-De13548	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M18-De13548	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	M18-De13548	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M18-De09467	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	M18-De09467	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	M18-De09467	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M18-De09261	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	M18-De09261	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	M18-De09261	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	M18-De09261	NCP	mg/kg	1.3	1.3	3.0	30%	Pass
Benzo(a)pyrene	M18-De09261	NCP	mg/kg	3.1	2.4	25	30%	Pass
Benzo(b&j)fluoranthene	M18-De09261	NCP	mg/kg	2.1	1.7	21	30%	Pass
Benzo(g,h,i)perylene	M18-De09261	NCP	mg/kg	2.1	1.8	17	30%	Pass
Benzo(k)fluoranthene	M18-De09261	NCP	mg/kg	2.1	1.8	17	30%	Pass
Chrysene	M18-De09261	NCP	mg/kg	2.6	2.5	3.0	30%	Pass
Dibenz(a,h)anthracene	M18-De09261	NCP	mg/kg	0.6	< 0.5	31	30%	Fail
Fluoranthene	M18-De09261	NCP	mg/kg	4.0	3.9	3.0	30%	Pass
Fluorene	M18-De09261	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	M18-De09261	NCP	mg/kg	3.1	2.4	23	30%	Pass
Naphthalene	M18-De09261	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M18-De09261	NCP	mg/kg	1.0	1.0	5.0	30%	Pass
Pyrene	M18-De09261	NCP	mg/kg	4.8	4.3	9.0	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M18-De09261	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M18-De09261	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M18-De09261	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M18-De09261	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M18-De09261	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M18-De09261	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M18-De09261	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M18-De09261	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M18-De09261	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M18-De09261	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M18-De09261	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M18-De09261	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M18-De09261	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	M18-De09261	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M18-De09261	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M18-De09261	NCP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M18-De09261	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M18-De09261	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M18-De09261	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M18-De09261	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M18-De12595	NCP	mg/kg	23	26	11	30%	Pass
Cyanide (total)	M18-De13137	NCP	mg/kg	6.5	< 5	120	30%	Fail
Fluoride	M18-De09317	NCP	mg/kg	< 100	< 100	<1	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	M18-De11933	NCP	pH Units	9.7	9.6	pass	30%	Pass
% Moisture	M18-De09436	NCP	%	9.3	9.2	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M18-De09641	NCP	mg/kg	3.0	2.9	1.0	30%	Pass
Cadmium	M18-De09641	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M18-De09641	NCP	mg/kg	20	20	1.0	30%	Pass
Copper	M18-De09641	NCP	mg/kg	11	11	<1	30%	Pass
Lead	M18-De09641	NCP	mg/kg	16	16	1.0	30%	Pass
Mercury	M18-De09641	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M18-De09641	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M18-De09641	NCP	mg/kg	7.4	7.4	<1	30%	Pass
Selenium	M18-De09641	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M18-De09641	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tin	M18-De09641	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M18-De09641	NCP	mg/kg	27	28	1.0	30%	Pass

Comments

Eurofins | mgt accreditation number 1261, corporate site 1254 and 14271 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis). Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N02	
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)



General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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AECOM

Q4AN(EV)-007-FM1

ANZ
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS/OFFICE:		SAMPLER: S. Macallock		Destination Laboratory	
PROJECT MANAGER (PM):		SITE: GUPP Groundwater Study		MOBILE:		ALS	
PROJECT NUMBER & TASK CODE: 60592634		P.O. NO.: EN/096/18		EMAIL REPORT:			
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY:		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:					
COOLER SEAL (circle appropriate)							
Intact: Yes No N/A							
SAMPLE TEMPERATURE							
CHILLED: Yes No							
SAMPLE INFORMATION (note: S = Soil, W = Water)		CONTAINER INFORMATION					
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
CPT-MW11-090119-0.2	S	09.01.19	0840			15	
CPT-MW11-090119-0.5	S	09.01.19	0845				
CPT-MW11-090119-1.0	S	09.01.19	0850				
CPT-MW11-090119-2.0	S	09.01.19	0855				
CPT-MW11-090119-3.0	S	09.01.19	0900				
CPT-MW11-090119-4.0	S	09.01.19	0905				
CPT-090119-090119	S	09.01.19	-			15	
CPT-090119-090119	W	09.01.19	-			8B	
CPT-090119-090119	W	09.01.19	-			2V	
CPT-090119-090119	W	09.01.19	-			1V	
CPT-090119-090119	W	09.01.19	-			1V	
CPT-090119-090119	S	09.01.19	-			15	
CPT-MW15-090119-0.2	S	09.01.19	1145			15	
CPT-MW15-090119-0.5	S	09.01.19	1150				
CPT-MW15-090119-1.0	S	09.01.19	1155				
CPT-MW15-090119-2.0	S	09.01.19	1130				
CPT-MW15-090119-3.0	S	09.01.19	1135				
CPT-MW15-090119-4.0	S	09.01.19	1140				
CPT-MW15-090119-0.2	S	09.01.19	1830				

Notes: e.g. Highly contaminated sample e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc.

Notes: freeze bags for Acid sulfate

Environmental Division
Melbourne
Work Order Reference
EM1900178

Telephone: +61-3-8549 9800

RECEIVED BY: [Signature]
Name: Scott
Date: 9/1/19
Time: 1630

RECEIVED BY: [Signature]
Name: [Signature]
Date: 11/1/19
Time: 1705

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.
Soil Container Codes: Jar = Unpreserved glass jar

Please freeze bags for Acid sulfate.
Relinquished by Scott (ANZ), 11/1/19, 14:15



From: [REDACTED]
Sent: Thursday, 10 January 2019 10:03 AM
To: Melbourne Enviro Services
Cc: [REDACTED]
Subject: FW: On Hold - EM1900178 - AECOMAU (60592634)

Hi,
Please find analysis for EM1900178 below. Thanks.

[REDACTED] Senior Environmental Engineer

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

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From: [REDACTED]
Sent: Thursday, 10 January 2019 10:00 AM
To: [REDACTED]
Subject: RE: On Hold - EM1900178 - AECOMAU (60592634)

Hi! [REDACTED]

Please analyse:

1. CPT_MW11_090119_0.2= IWRG621
2. CPT_MW11_080119_1.0 = IWRG621
3. CPT_MW15_090119_0.2 = IWRG621
4. CPT_MW15_090119_0.5 = IWRG621
5. CPT_MW16_090119_0.2 = IWRG621
6. CPT_MW16_090119_0.5 = IWRG621
7. CPT_MW11_090119_0.5 = Chromium Suite (EA033)
8. CPT_MW11_090119_2.0 = Chromium Suite (EA033)
9. CPT_MW15_090119_0.2 = Chromium Suite (EA033)
10. CPT_MW15_090119_1.0 = Chromium Suite (EA033)
11. CPT_MW16_090119_0.2 = Chromium Suite (EA033)
12. CPT_MW16_090119_2.0 = Chromium Suite (EA033)
13. QC101_090119 = IWRG621
14. QC201_090119 = IWRG621 (Triplicate, please forward to Eurofins)
15. QC308_090119 = IWRG621 water equivalent
16. QC408_090119 = TPH(C6-C9)/BTEXN
17. QC513_090119 = TPH(C6-C9)/BTEXN
18. QC514_090119 = TPH(C6-C9)/BTEXN

At standard TAT. Thanks.

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**
Contact name: **[REDACTED]**
Project name: **GIJPP GROUNDWATER STUDY**
Project ID: **60592634**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Jan 11, 2019 3:35 PM**
Eurofins | mgt reference: **635521**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : .3 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : +61 3 8564 5000 or by e.mail: **[REDACTED]**@eurofins.com

Results will be delivered electronically via e.mail to **[REDACTED]**

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report 635521-S
Project name GIJPP GROUNDWATER STUDY
Project ID 60592634
Received Date Jan 11, 2019

Client Sample ID			CPT_QC201_0 90119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja06018
Date Sampled			Jan 09, 2019
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
Volatile Organics			
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Volatile Organics			
1,1-Dichloroethane	0.5	mg/kg	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5

Client Sample ID			CPT_QC201_0
Sample Matrix			90119
Eurofins mgt Sample No.			Soil
Date Sampled			M19-Ja06018
Test/Reference	LOR	Unit	Jan 09, 2019
Volatile Organics			
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1,2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1,3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1,2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1,3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	125
Toluene-d8 (surr.)	1	%	97
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			CPT_QC201_0
Sample Matrix			90119
Eurofins mgt Sample No.			Soil
Date Sampled			M19-Ja06018
Test/Reference	LOR	Unit	Jan 09, 2019
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	55
p-Terphenyl-d14 (surr.)	1	%	69
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchloroendate (surr.)	1	%	82
Tetrachloro-m-xylene (surr.)	1	%	68
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1

Client Sample ID			CPT_QC201_0
Sample Matrix			90119
Eurofins mgt Sample No.			Soil
Date Sampled			M19-Ja06018
Test/Reference	LOR	Unit	Jan 09, 2019
Polychlorinated Biphenyls			
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchloredate (surr.)	1	%	82
Tetrachloro-m-xylene (surr.)	1	%	68
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	37
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride	100	mg/kg	< 100
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.6
% Moisture	1	%	24
Heavy Metals			
Arsenic	2	mg/kg	3.1
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	44
Copper	5	mg/kg	16
Lead	5	mg/kg	9.8
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	19
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	9.0

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Jan 18, 2019	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Jan 18, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Jan 18, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Jan 18, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Jan 18, 2019	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Jan 18, 2019	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Jan 18, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Jan 18, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Jan 12, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008
Project Name: GIJPP GROUNDWATER STUDY
Project ID: 60592634

Order No.:
Report #: 635521
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Jan 11, 2019 3:35 PM
Due: Jan 18, 2019
Priority: 5 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IW/RG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	CPT_QC201_090119	Jan 09, 2019		Soil	M19-Ja06018	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
1,2,4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1,1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1,1,1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,1,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,3,5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1,2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1,3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	125			70-130	Pass	
TRH C10-C14	%	100			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	80			70-130	Pass	
1.1.1-Trichloroethane	%	87			70-130	Pass	
1.2-Dichlorobenzene	%	83			70-130	Pass	
1.2-Dichloroethane	%	91			70-130	Pass	
Benzene	%	95			70-130	Pass	
Ethylbenzene	%	118			70-130	Pass	
m&p-Xylenes	%	127			70-130	Pass	
Toluene	%	89			70-130	Pass	
Trichloroethene	%	85			70-130	Pass	
Xylenes - Total	%	127			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	76			70-130	Pass	
TRH C6-C10	%	125			70-130	Pass	
TRH >C10-C16	%	97			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	102			70-130	Pass	
Acenaphthylene	%	107			70-130	Pass	
Anthracene	%	106			70-130	Pass	
Benz(a)anthracene	%	80			70-130	Pass	
Benzo(a)pyrene	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	%	78			70-130	Pass	
Benzo(g,h,i)perylene	%	72			70-130	Pass	
Benzo(k)fluoranthene	%	78			70-130	Pass	
Chrysene	%	83			70-130	Pass	
Dibenz(a,h)anthracene	%	92			70-130	Pass	
Fluoranthene	%	95			70-130	Pass	
Fluorene	%	81			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	77			70-130	Pass	
Naphthalene	%	99			70-130	Pass	
Phenanthrene	%	76			70-130	Pass	
Pyrene	%	102			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	119			70-130	Pass	
4,4'-DDD	%	115			70-130	Pass	
4,4'-DDE	%	94			70-130	Pass	
a-BHC	%	108			70-130	Pass	
Aldrin	%	121			70-130	Pass	
b-BHC	%	76			70-130	Pass	
d-BHC	%	95			70-130	Pass	
Dieldrin	%	119			70-130	Pass	
Endosulfan I	%	85			70-130	Pass	
Endosulfan II	%	83			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate			%	87			70-130	Pass	
Endrin			%	82			70-130	Pass	
Endrin aldehyde			%	88			70-130	Pass	
Endrin ketone			%	98			70-130	Pass	
g-BHC (Lindane)			%	97			70-130	Pass	
Heptachlor			%	107			70-130	Pass	
Heptachlor epoxide			%	103			70-130	Pass	
Hexachlorobenzene			%	120			70-130	Pass	
LCS - % Recovery									
Phenols (Halogenated)									
2-Chlorophenol			%	85			30-130	Pass	
2,4-Dichlorophenol			%	74			30-130	Pass	
2,4,5-Trichlorophenol			%	82			30-130	Pass	
2,4,6-Trichlorophenol			%	78			30-130	Pass	
2,6-Dichlorophenol			%	71			30-130	Pass	
4-Chloro-3-methylphenol			%	78			30-130	Pass	
Pentachlorophenol			%	66			30-130	Pass	
Tetrachlorophenols - Total			%	86			30-130	Pass	
LCS - % Recovery									
Phenols (non-Halogenated)									
2-Cyclohexyl-4,6-dinitrophenol			%	88			30-130	Pass	
2-Methyl-4,6-dinitrophenol			%	84			30-130	Pass	
2-Methylphenol (o-Cresol)			%	76			30-130	Pass	
2-Nitrophenol			%	72			30-130	Pass	
2,4-Dimethylphenol			%	72			30-130	Pass	
2,4-Dinitrophenol			%	38			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)			%	82			30-130	Pass	
4-Nitrophenol			%	99			30-130	Pass	
Dinoseb			%	97			30-130	Pass	
Phenol			%	69			30-130	Pass	
LCS - % Recovery									
Chromium (hexavalent)			%	96			70-130	Pass	
Cyanide (total)			%	110			70-130	Pass	
Fluoride			%	108			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	110			80-120	Pass	
Cadmium			%	107			80-120	Pass	
Chromium			%	111			80-120	Pass	
Copper			%	118			80-120	Pass	
Lead			%	117			80-120	Pass	
Mercury			%	108			75-125	Pass	
Molybdenum			%	118			80-120	Pass	
Nickel			%	116			80-120	Pass	
Selenium			%	110			80-120	Pass	
Silver			%	108			80-120	Pass	
Tin			%	109			80-120	Pass	
Zinc			%	114			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M19-Ja06031	NCP	%	114			70-130	Pass	
TRH C10-C14	M19-Ja06031	NCP	%	112			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Volatile Organics				Result 1					
1.1-Dichloroethene	M19-Ja05359	NCP	%	78			70-130	Pass	
1.1.1-Trichloroethane	M19-Ja06031	NCP	%	84			70-130	Pass	
1.2-Dichlorobenzene	M19-Ja06031	NCP	%	80			70-130	Pass	
1.2-Dichloroethane	M19-Ja06031	NCP	%	101			70-130	Pass	
Benzene	M19-Ja06031	NCP	%	98			70-130	Pass	
Ethylbenzene	M19-Ja06031	NCP	%	104			70-130	Pass	
m&p-Xylenes	M19-Ja06031	NCP	%	102			70-130	Pass	
o-Xylene	M19-Ja06031	NCP	%	98			70-130	Pass	
Toluene	M19-Ja06031	NCP	%	109			70-130	Pass	
Trichloroethene	M19-Ja06031	NCP	%	91			70-130	Pass	
Xylenes - Total	M19-Ja06031	NCP	%	100			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S19-Ja03965	NCP	%	87			70-130	Pass	
TRH C6-C10	M19-Ja06031	NCP	%	104			70-130	Pass	
TRH >C10-C16	M19-Ja06031	NCP	%	115			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M19-Ja05366	NCP	%	110			70-130	Pass	
Acenaphthylene	M19-Ja05366	NCP	%	116			70-130	Pass	
Anthracene	M19-Ja05366	NCP	%	85			70-130	Pass	
Benz(a)anthracene	M19-Ja05366	NCP	%	94			70-130	Pass	
Benzo(a)pyrene	M19-Ja05366	NCP	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	M19-Ja05366	NCP	%	74			70-130	Pass	
Benzo(g,h,i)perylene	M19-Ja05366	NCP	%	74			70-130	Pass	
Benzo(k)fluoranthene	M19-Ja05366	NCP	%	80			70-130	Pass	
Chrysene	M19-Ja05366	NCP	%	90			70-130	Pass	
Dibenz(a,h)anthracene	M19-Ja05366	NCP	%	76			70-130	Pass	
Fluoranthene	M19-Ja05366	NCP	%	92			70-130	Pass	
Fluorene	M19-Ja05366	NCP	%	87			70-130	Pass	
Indeno(1,2,3-cd)pyrene	M19-Ja05366	NCP	%	84			70-130	Pass	
Naphthalene	M19-Ja05366	NCP	%	106			70-130	Pass	
Phenanthrene	M19-Ja05366	NCP	%	118			70-130	Pass	
Pyrene	M19-Ja05366	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M19-Ja04085	NCP	%	98			70-130	Pass	
4,4'-DDE	M19-Ja04085	NCP	%	83			70-130	Pass	
a-BHC	M19-Ja04085	NCP	%	95			70-130	Pass	
Aldrin	M19-Ja04085	NCP	%	106			70-130	Pass	
d-BHC	M19-Ja04085	NCP	%	71			70-130	Pass	
Dieldrin	M19-Ja04085	NCP	%	85			70-130	Pass	
Endosulfan I	M19-Ja04085	NCP	%	76			70-130	Pass	
Endosulfan II	M19-Ja04085	NCP	%	85			70-130	Pass	
Endosulfan sulphate	M19-Ja04085	NCP	%	100			70-130	Pass	
Endrin aldehyde	M19-Ja04085	NCP	%	112			70-130	Pass	
Endrin ketone	M19-Ja04085	NCP	%	72			70-130	Pass	
g-BHC (Lindane)	M19-Ja04085	NCP	%	96			70-130	Pass	
Heptachlor	M19-Ja04085	NCP	%	97			70-130	Pass	
Hexachlorobenzene	M19-Ja04085	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M19-Ja05366	NCP	%	77			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2,4-Dichlorophenol	M19-Ja05366	NCP	%	76			30-130	Pass	
2,4,5-Trichlorophenol	M19-Ja05366	NCP	%	91			30-130	Pass	
2,4,6-Trichlorophenol	M19-Ja05366	NCP	%	81			30-130	Pass	
2,6-Dichlorophenol	M19-Ja05366	NCP	%	82			30-130	Pass	
4-Chloro-3-methylphenol	M19-Ja05366	NCP	%	57			30-130	Pass	
Pentachlorophenol	M19-Ja05366	NCP	%	57			30-130	Pass	
Tetrachlorophenols - Total	M19-Ja05366	NCP	%	86			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4,6-dinitrophenol	M19-Ja05366	NCP	%	67			30-130	Pass	
2-Methyl-4,6-dinitrophenol	M19-Ja05366	NCP	%	51			30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Ja05366	NCP	%	72			30-130	Pass	
2-Nitrophenol	M19-Ja05366	NCP	%	74			30-130	Pass	
2,4-Dimethylphenol	M19-Ja05366	NCP	%	40			30-130	Pass	
2,4-Dinitrophenol	M19-Ja05366	NCP	%	43			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Ja05366	NCP	%	91			30-130	Pass	
4-Nitrophenol	M19-Ja05366	NCP	%	107			30-130	Pass	
Dinoseb	M19-Ja05366	NCP	%	69			30-130	Pass	
Phenol	M19-Ja05366	NCP	%	71			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M19-Ja06039	NCP	%	113			70-130	Pass	
Fluoride	M19-Ja13269	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B19-Ja00799	NCP	%	107			75-125	Pass	
Cadmium	B19-Ja00799	NCP	%	101			75-125	Pass	
Chromium	B19-Ja00799	NCP	%	121			75-125	Pass	
Copper	B19-Ja00799	NCP	%	116			75-125	Pass	
Lead	B19-Ja00799	NCP	%	111			75-125	Pass	
Mercury	B19-Ja00799	NCP	%	108			70-130	Pass	
Molybdenum	B19-Ja00799	NCP	%	117			75-125	Pass	
Nickel	B19-Ja00799	NCP	%	116			75-125	Pass	
Selenium	B19-Ja00799	NCP	%	110			75-125	Pass	
Silver	B19-Ja00799	NCP	%	99			75-125	Pass	
Tin	B19-Ja00799	NCP	%	117			75-125	Pass	
Zinc	B19-Ja00799	NCP	%	117			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M19-Ja13282	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M19-Ja06060	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M19-Ja06060	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M19-Ja06060	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1,2,4-Trichlorobenzene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1,1-Dichloroethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1-Dichloroethene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,1-Trichloroethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,1,2-Tetrachloroethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.1.2-Trichloroethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.2.2-Tetrachloroethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dibromoethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichlorobenzene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloroethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloropropane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.3-Trichloropropane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.4-Trimethylbenzene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichlorobenzene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichloropropane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3.5-Trimethylbenzene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.4-Dichlorobenzene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Butanone (MEK)	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Propanone (Acetone)	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chlorotoluene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Methyl-2-pentanone (MIBK)	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Allyl chloride	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzene	M19-Ja13282	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Bromobenzene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromochloromethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromodichloromethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromoform	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromomethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon disulfide	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon Tetrachloride	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chlorobenzene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroform	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloromethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.2-Dichloroethene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.3-Dichloropropene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromochloromethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromomethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dichlorodifluoromethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Ethylbenzene	M19-Ja13282	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Iodomethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Isopropyl benzene (Cumene)	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
m&p-Xylenes	M19-Ja13282	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methylene Chloride	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
o-Xylene	M19-Ja13282	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Styrene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Toluene	M19-Ja13282	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
trans-1.2-Dichloroethene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1.3-Dichloropropene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Xylenes - Total	M19-Ja13282	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass

Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M19-Ja13282	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	M19-Ja13282	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M19-Ja06060	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	M19-Ja06060	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	M19-Ja06060	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M19-Ja06030	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M19-Ja06030	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M19-Ja06030	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M19-Ja06030	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M19-Ja06030	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M19-Ja06030	NCP	mg/kg	< 1	< 1	<1	30%	Pass

Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M19-Ja06030	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M19-Ja06030	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M19-Ja06030	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	M19-Ja06030	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M19-Ja06030	NCP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M19-Ja06030	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M19-Ja06030	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M19-Ja06030	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M19-Ja06038	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Cyanide (total)	M19-Ja13273	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Fluoride	M19-Ja04795	NCP	mg/kg	< 100	160	52	30%	Fail
pH (1:5 Aqueous extract at 25°C as rec.)	M19-Ja05990	NCP	pH Units	9.6	9.5	pass	30%	Pass
% Moisture	M19-Ja06034	NCP	%	30	29	4.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M19-Ja06029	NCP	mg/kg	3.4	3.8	10	30%	Pass
Cadmium	M19-Ja06029	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M19-Ja06029	NCP	mg/kg	13	14	5.0	30%	Pass
Copper	M19-Ja06029	NCP	mg/kg	9.5	9.0	6.0	30%	Pass
Lead	M19-Ja06029	NCP	mg/kg	22	22	1.0	30%	Pass
Mercury	M19-Ja06029	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M19-Ja06029	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M19-Ja06029	NCP	mg/kg	8.5	8.6	1.0	30%	Pass
Selenium	M19-Ja06029	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M19-Ja06029	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tin	M19-Ja06029	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M19-Ja06029	NCP	mg/kg	40	40	1.0	30%	Pass

Comments






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)




General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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ANZ
FCM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: S. Macdonald		Destination Laboratory	
PROJECT NUMBER & TASK CODE: 60592634		SITE: GPP Groundwater Study		MOBILE: [REDACTED]		ALS	
RESULTS REQUIRED (Date):		P.O. NO.: E/1096/18		EMAIL REPORT TO: [REDACTED]			
FOR LABORATORY USE ONLY		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		ANALYSIS REQUIRED including SITES (note - suite codes must be listed to attract suite prices)		Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
COOLER SEAL (Indicate appropriate)	Yes	No	N/A				
SAMPLE TEMPERATURE							
CHILLED:	Yes	No					
SAMPLE INFORMATION (note: S = Soil, W = Water)				CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
1	CPT000-MW02-10019-0.2	S	10.01.19	0815		15	X HOLD
2	CPT000-MW02-10019-0.5	S		0820			X bags for Acid sulfate analysis
3	CPT000-MW02-10019-1.0	S		0825			X
4	CPT000-MW02-10019-1.5	S		0830			X
5	CPT000-MW02-10019-2.0	S		0835			X
6	CPT000-MW02-10019-2.5	S		0840			X
7	CPT000-MW02-10019-3.0	S		0845			X
8	CPT000-MW02-10019-3.5	S		0850			X
9	CPT000-MW02-10019-4.0	S		0855			X
10	CPT-AC309-10019	W				63	X
11	CPT-AC409-10019	W				20	X
12	CPT-AC515	W				10	X
13	CPT-AC102-10019	S				15	X
14	CPT-AC202-10019	S				1518	X
15	CPT000-MW03-10019-0.2	S		1010			X
16	CPT000-MW03-10019-0.5	S		1015			X
17	CPT000-MW03-10019-1.0	S		1020			X
18	CPT000-MW03-10019-1.5	S		1025			X
19	CPT000-MW03-10019-2.0	S		1030			X

RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:	
Name: Stephen McEwen	Date: 10-01-19	Name: NIKI	Date: 10/1	Name: [Signature]	Date: 11/1
Of: AECOM	Time: 1630	Of: NI	Time: 16:40	Of: [Signature]	Time: 17:35

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Specimen bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solts; U = Unpreserved Bag.

Soil Container Codes: Jar = Unpreserved glass jar

Telephone : - 61-8-8549 9800



Environmental Division
Melbourne
Work Order Reference
EM1900257

Please freeze bags for Acid sulfate analysis
Relinquished by Scott (MS), 11/1/19 14:15.



From: [REDACTED]
Sent: Friday, 11 January 2019 8:34 AM
To: [REDACTED]
Cc: Melbourne Enviro Services
Subject: RE: ON HOLD - EM1900257 - AECOM 60592634 GIJPP

Hi [REDACTED]

Please analyse:

- 3 1. CPT000_MW02_100119_1.0 = IWRG621
- 6 2. CPT000_MW02_100119_2.0 = IWRG621
- 14 3. CPT000_MW03_100119_0.2 = IWRG621
- 15 4. CPT000_MW03_100119_0.5 = IWRG621
- 25 5. CPT_MW08_100119_0.5 = IWRG621
- 27 6. CPT_MW08_100119_2.0 = IWRG621
- 2 7. CPT000_MW02_100119_0.5 = Chromium Suite (EA033)
- 7 8. CPT000_MW02_100119_3.0 = Chromium Suite (EA033)
- 16 9. CPT000_MW03_100119_1.0 = Chromium Suite (EA033)
- 18 10. CPT000_MW03_100119_2.0 = Chromium Suite (EA033)
- 26 11. CPT_MW08_100119_1.0 = Chromium Suite (EA033)
- 27 12. CPT_MW08_100119_2.0 = Chromium Suite (EA033)
- 13 13. QC102_100119 = IWRG621
14. QC202_100119 = IWRG621 (Triplicate, please forward to Eurofins)
- 10 15. QC309_100119 = IWRG621 water equivalent
- 11 16. QC409_100119 = TPH(C6-C9)/BTEXN
- 12 17. QC515_100119 = TPH(C6-C9)/BTEXN
- 23 18. QC516_100119 = TPH(C6-C9)/BTEXN

At standard TAT. Thanks.

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

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From: [REDACTED]@alsglobal.com]
Sent: Friday, 11 January 2019 8:01 AM
To: [REDACTED]
Cc: Melbourne Enviro Services
Subject: FW: ON HOLD - EM1900257 - AECOM 60592634 GIJPP

Hi [REDACTED]

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**
Contact name: [REDACTED]
Project name: **GIJPP GROUNDWATER STUDY**
Project ID: **60592634**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Jan 11, 2019 3:35 PM**
Eurofins | mgt reference: **635524**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : .3 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : +61 3 8564 5000 or by e.mail: [REDACTED]

Results will be delivered electronically via e.mail to [REDACTED]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report 635524-S
Project name GIJPP GROUNDWATER STUDY
Project ID 60592634
Received Date Jan 11, 2019

Client Sample ID			CPT_QC202_1 00119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja06029
Date Sampled			Jan 10, 2019
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
Volatile Organics			
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Volatile Organics			
1,1-Dichloroethane	0.5	mg/kg	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5

Client Sample ID			CPT_QC202_1
Sample Matrix			00119
Eurofins mgt Sample No.			Soil
Date Sampled			M19-Ja06029
Test/Reference	LOR	Unit	Jan 10, 2019
Volatile Organics			
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	129
Toluene-d8 (surr.)	1	%	119
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			CPT_QC202_1
Sample Matrix			00119
Eurofins mgt Sample No.			Soil
Date Sampled			M19-Ja06029
Test/Reference	LOR	Unit	Jan 10, 2019
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	51
p-Terphenyl-d14 (surr.)	1	%	62
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorodate (surr.)	1	%	69
Tetrachloro-m-xylene (surr.)	1	%	65
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1

Client Sample ID			CPT_QC202_1
Sample Matrix			00119
Eurofins mgt Sample No.			Soil
Date Sampled			M19-Ja06029
Test/Reference	LOR	Unit	Jan 10, 2019
Polychlorinated Biphenyls			
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchloredate (surr.)	1	%	69
Tetrachloro-m-xylene (surr.)	1	%	65
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	37
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride	100	mg/kg	< 100
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.6
% Moisture	1	%	7.7
Heavy Metals			
Arsenic	2	mg/kg	3.4
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	13
Copper	5	mg/kg	9.5
Lead	5	mg/kg	22
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	8.5
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	40

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Jan 18, 2019	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Jan 18, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Jan 18, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Jan 18, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Jan 18, 2019	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Jan 18, 2019	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Jan 18, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Jan 18, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Jan 12, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008
Project Name: GIJPP GROUNDWATER STUDY
Project ID: 60592634

Order No.: 60592634
Report #: 635524
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Jan 11, 2019 3:35 PM
Due: Jan 18, 2019
Priority: 5 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IW/RG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	CPT_QC202_100119	Jan 10, 2019		Soil	M19-Ja06029	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPa, PFHx, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
1,2,4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1,1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1,1,1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,1,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,3,5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1,2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1,3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	125			70-130	Pass	
TRH C10-C14	%	100			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	80			70-130	Pass	
1.1.1-Trichloroethane	%	87			70-130	Pass	
1.2-Dichlorobenzene	%	83			70-130	Pass	
1.2-Dichloroethane	%	91			70-130	Pass	
Benzene	%	95			70-130	Pass	
Ethylbenzene	%	118			70-130	Pass	
m&p-Xylenes	%	127			70-130	Pass	
Toluene	%	89			70-130	Pass	
Trichloroethene	%	85			70-130	Pass	
Xylenes - Total	%	127			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	76			70-130	Pass	
TRH C6-C10	%	125			70-130	Pass	
TRH >C10-C16	%	97			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	102			70-130	Pass	
Acenaphthylene	%	107			70-130	Pass	
Anthracene	%	106			70-130	Pass	
Benz(a)anthracene	%	80			70-130	Pass	
Benzo(a)pyrene	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	%	78			70-130	Pass	
Benzo(g,h,i)perylene	%	72			70-130	Pass	
Benzo(k)fluoranthene	%	78			70-130	Pass	
Chrysene	%	83			70-130	Pass	
Dibenz(a,h)anthracene	%	92			70-130	Pass	
Fluoranthene	%	95			70-130	Pass	
Fluorene	%	81			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	77			70-130	Pass	
Naphthalene	%	99			70-130	Pass	
Phenanthrene	%	76			70-130	Pass	
Pyrene	%	102			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	119			70-130	Pass	
4,4'-DDD	%	115			70-130	Pass	
4,4'-DDE	%	94			70-130	Pass	
a-BHC	%	108			70-130	Pass	
Aldrin	%	121			70-130	Pass	
b-BHC	%	76			70-130	Pass	
d-BHC	%	95			70-130	Pass	
Dieldrin	%	119			70-130	Pass	
Endosulfan I	%	85			70-130	Pass	
Endosulfan II	%	83			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate			%	87			70-130	Pass	
Endrin			%	82			70-130	Pass	
Endrin aldehyde			%	88			70-130	Pass	
Endrin ketone			%	98			70-130	Pass	
g-BHC (Lindane)			%	97			70-130	Pass	
Heptachlor			%	107			70-130	Pass	
Heptachlor epoxide			%	103			70-130	Pass	
Hexachlorobenzene			%	120			70-130	Pass	
LCS - % Recovery									
Phenols (Halogenated)									
2-Chlorophenol			%	85			30-130	Pass	
2,4-Dichlorophenol			%	74			30-130	Pass	
2,4,5-Trichlorophenol			%	82			30-130	Pass	
2,4,6-Trichlorophenol			%	78			30-130	Pass	
2,6-Dichlorophenol			%	71			30-130	Pass	
4-Chloro-3-methylphenol			%	78			30-130	Pass	
Pentachlorophenol			%	66			30-130	Pass	
Tetrachlorophenols - Total			%	86			30-130	Pass	
LCS - % Recovery									
Phenols (non-Halogenated)									
2-Cyclohexyl-4,6-dinitrophenol			%	88			30-130	Pass	
2-Methyl-4,6-dinitrophenol			%	84			30-130	Pass	
2-Methylphenol (o-Cresol)			%	76			30-130	Pass	
2-Nitrophenol			%	72			30-130	Pass	
2,4-Dimethylphenol			%	72			30-130	Pass	
2,4-Dinitrophenol			%	38			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)			%	82			30-130	Pass	
4-Nitrophenol			%	99			30-130	Pass	
Dinoseb			%	97			30-130	Pass	
Phenol			%	69			30-130	Pass	
LCS - % Recovery									
Chromium (hexavalent)			%	96			70-130	Pass	
Cyanide (total)			%	110			70-130	Pass	
Fluoride			%	108			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	110			80-120	Pass	
Cadmium			%	107			80-120	Pass	
Chromium			%	111			80-120	Pass	
Copper			%	118			80-120	Pass	
Lead			%	117			80-120	Pass	
Mercury			%	108			75-125	Pass	
Molybdenum			%	118			80-120	Pass	
Nickel			%	116			80-120	Pass	
Selenium			%	110			80-120	Pass	
Silver			%	108			80-120	Pass	
Tin			%	109			80-120	Pass	
Zinc			%	114			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M19-Ja06031	NCP	%	114			70-130	Pass	
TRH C10-C14	M19-Ja06031	NCP	%	112			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Volatile Organics				Result 1					
1.1-Dichloroethene	M19-Ja05359	NCP	%	78			70-130	Pass	
1.1.1-Trichloroethane	M19-Ja06031	NCP	%	84			70-130	Pass	
1.2-Dichlorobenzene	M19-Ja06031	NCP	%	80			70-130	Pass	
1.2-Dichloroethane	M19-Ja06031	NCP	%	101			70-130	Pass	
Benzene	M19-Ja06031	NCP	%	98			70-130	Pass	
Ethylbenzene	M19-Ja06031	NCP	%	104			70-130	Pass	
m&p-Xylenes	M19-Ja06031	NCP	%	102			70-130	Pass	
o-Xylene	M19-Ja06031	NCP	%	98			70-130	Pass	
Toluene	M19-Ja06031	NCP	%	109			70-130	Pass	
Trichloroethene	M19-Ja06031	NCP	%	91			70-130	Pass	
Xylenes - Total	M19-Ja06031	NCP	%	100			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S19-Ja03965	NCP	%	87			70-130	Pass	
TRH C6-C10	M19-Ja06031	NCP	%	104			70-130	Pass	
TRH >C10-C16	M19-Ja06031	NCP	%	115			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M19-Ja05366	NCP	%	110			70-130	Pass	
Acenaphthylene	M19-Ja05366	NCP	%	116			70-130	Pass	
Anthracene	M19-Ja05366	NCP	%	85			70-130	Pass	
Benz(a)anthracene	M19-Ja05366	NCP	%	94			70-130	Pass	
Benzo(a)pyrene	M19-Ja05366	NCP	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	M19-Ja05366	NCP	%	74			70-130	Pass	
Benzo(g,h,i)perylene	M19-Ja05366	NCP	%	74			70-130	Pass	
Benzo(k)fluoranthene	M19-Ja05366	NCP	%	80			70-130	Pass	
Chrysene	M19-Ja05366	NCP	%	90			70-130	Pass	
Dibenz(a,h)anthracene	M19-Ja05366	NCP	%	76			70-130	Pass	
Fluoranthene	M19-Ja05366	NCP	%	92			70-130	Pass	
Fluorene	M19-Ja05366	NCP	%	87			70-130	Pass	
Indeno(1,2,3-cd)pyrene	M19-Ja05366	NCP	%	84			70-130	Pass	
Naphthalene	M19-Ja05366	NCP	%	106			70-130	Pass	
Phenanthrene	M19-Ja05366	NCP	%	118			70-130	Pass	
Pyrene	M19-Ja05366	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M19-Ja04085	NCP	%	98			70-130	Pass	
4,4'-DDE	M19-Ja04085	NCP	%	83			70-130	Pass	
a-BHC	M19-Ja04085	NCP	%	95			70-130	Pass	
Aldrin	M19-Ja04085	NCP	%	106			70-130	Pass	
d-BHC	M19-Ja04085	NCP	%	71			70-130	Pass	
Dieldrin	M19-Ja04085	NCP	%	85			70-130	Pass	
Endosulfan I	M19-Ja04085	NCP	%	76			70-130	Pass	
Endosulfan II	M19-Ja04085	NCP	%	85			70-130	Pass	
Endosulfan sulphate	M19-Ja04085	NCP	%	100			70-130	Pass	
Endrin aldehyde	M19-Ja04085	NCP	%	112			70-130	Pass	
Endrin ketone	M19-Ja04085	NCP	%	72			70-130	Pass	
g-BHC (Lindane)	M19-Ja04085	NCP	%	96			70-130	Pass	
Heptachlor	M19-Ja04085	NCP	%	97			70-130	Pass	
Hexachlorobenzene	M19-Ja04085	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M19-Ja05366	NCP	%	77			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2,4-Dichlorophenol	M19-Ja05366	NCP	%	76			30-130	Pass	
2,4,5-Trichlorophenol	M19-Ja05366	NCP	%	91			30-130	Pass	
2,4,6-Trichlorophenol	M19-Ja05366	NCP	%	81			30-130	Pass	
2,6-Dichlorophenol	M19-Ja05366	NCP	%	82			30-130	Pass	
4-Chloro-3-methylphenol	M19-Ja05366	NCP	%	57			30-130	Pass	
Pentachlorophenol	M19-Ja05366	NCP	%	57			30-130	Pass	
Tetrachlorophenols - Total	M19-Ja05366	NCP	%	86			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4,6-dinitrophenol	M19-Ja05366	NCP	%	67			30-130	Pass	
2-Methyl-4,6-dinitrophenol	M19-Ja05366	NCP	%	51			30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Ja05366	NCP	%	72			30-130	Pass	
2-Nitrophenol	M19-Ja05366	NCP	%	74			30-130	Pass	
2,4-Dimethylphenol	M19-Ja05366	NCP	%	40			30-130	Pass	
2,4-Dinitrophenol	M19-Ja05366	NCP	%	43			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Ja05366	NCP	%	91			30-130	Pass	
4-Nitrophenol	M19-Ja05366	NCP	%	107			30-130	Pass	
Dinoseb	M19-Ja05366	NCP	%	69			30-130	Pass	
Phenol	M19-Ja05366	NCP	%	71			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M19-Ja06039	NCP	%	113			70-130	Pass	
Fluoride	M19-Ja13269	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B19-Ja00799	NCP	%	107			75-125	Pass	
Cadmium	B19-Ja00799	NCP	%	101			75-125	Pass	
Chromium	B19-Ja00799	NCP	%	121			75-125	Pass	
Copper	B19-Ja00799	NCP	%	116			75-125	Pass	
Lead	B19-Ja00799	NCP	%	111			75-125	Pass	
Mercury	B19-Ja00799	NCP	%	108			70-130	Pass	
Molybdenum	B19-Ja00799	NCP	%	117			75-125	Pass	
Nickel	B19-Ja00799	NCP	%	116			75-125	Pass	
Selenium	B19-Ja00799	NCP	%	110			75-125	Pass	
Silver	B19-Ja00799	NCP	%	99			75-125	Pass	
Tin	B19-Ja00799	NCP	%	117			75-125	Pass	
Zinc	B19-Ja00799	NCP	%	117			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M19-Ja05359	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M19-Ja06060	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M19-Ja06060	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M19-Ja06060	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1,2,4-Trichlorobenzene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1,1-Dichloroethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1-Dichloroethene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,1-Trichloroethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,1,2-Tetrachloroethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.1.2-Trichloroethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.2.2-Tetrachloroethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dibromoethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichlorobenzene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloroethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloropropane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.3-Trichloropropane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.4-Trimethylbenzene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichlorobenzene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichloropropane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3.5-Trimethylbenzene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.4-Dichlorobenzene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Butanone (MEK)	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Propanone (Acetone)	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chlorotoluene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Methyl-2-pentanone (MIBK)	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Allyl chloride	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzene	M19-Ja05359	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Bromobenzene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromochloromethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromodichloromethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromoform	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromomethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon disulfide	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon Tetrachloride	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chlorobenzene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroform	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloromethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.2-Dichloroethene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.3-Dichloropropene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromochloromethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromomethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dichlorodifluoromethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Ethylbenzene	M19-Ja05359	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Iodomethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Isopropyl benzene (Cumene)	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
m&p-Xylenes	M19-Ja05359	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methylene Chloride	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
o-Xylene	M19-Ja05359	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Styrene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Toluene	M19-Ja05359	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
trans-1.2-Dichloroethene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1.3-Dichloropropene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Xylenes - Total	M19-Ja05359	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass

Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M19-Ja05359	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	M19-Ja05359	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M19-Ja06060	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	M19-Ja06060	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	M19-Ja06060	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M19-Ja06030	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M19-Ja06030	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M19-Ja06030	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M19-Ja06030	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M19-Ja06030	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M19-Ja06030	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M19-Ja06030	NCP	mg/kg	< 1	< 1	<1	30%	Pass

Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M19-Ja06030	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M19-Ja06030	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M19-Ja06030	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	M19-Ja06030	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M19-Ja06030	NCP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M19-Ja06030	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M19-Ja06030	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M19-Ja06030	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M19-Ja06030	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M19-Ja06038	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Cyanide (total)	M19-Ja13273	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Fluoride	M19-Ja04795	NCP	mg/kg	< 100	160	52	30%	Fail
pH (1:5 Aqueous extract at 25°C as rec.)	M19-Ja06030	NCP	pH Units	8.5	8.6	pass	30%	Pass
% Moisture	M19-Ja06034	NCP	%	30	29	4.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M19-Ja06029	CP	mg/kg	3.4	3.8	10	30%	Pass
Cadmium	M19-Ja06029	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M19-Ja06029	CP	mg/kg	13	14	5.0	30%	Pass
Copper	M19-Ja06029	CP	mg/kg	9.5	9.0	6.0	30%	Pass
Lead	M19-Ja06029	CP	mg/kg	22	22	1.0	30%	Pass
Mercury	M19-Ja06029	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M19-Ja06029	CP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M19-Ja06029	CP	mg/kg	8.5	8.6	1.0	30%	Pass
Selenium	M19-Ja06029	CP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M19-Ja06029	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tin	M19-Ja06029	CP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M19-Ja06029	CP	mg/kg	40	40	1.0	30%	Pass

Comments






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)




General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

FQM - Generic Chain of Custody Form

COMPLETANT: AECOM		ADDRESS / OFFICE:		SAMPLER: BE/PH		Destination Laboratory	
PROJECT MANAGER (PM):		SITE: One Impact Jetty Pipeline Project (OLUPP) EEB		MOBILE:			
PROJECT NUMBER & TASK CODE: 6052811-60572634		P.O. NO.:		EMAIL REPORT TO:			
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
ECHO LABORATORY (ONLY)		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:					
DO NOT WRITE IN THESE SPACES							
DATE: 14/01/17							
TIME: 14:15 PM							
NAME: JAM							
OFF: AV							
DATE: 14/01/17							
TIME: 14:15 PM							
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From: [REDACTED]
Sent: Tuesday, 15 January 2019 8:41 AM
To: [REDACTED]
Subject: GIJPP EES - eskies couriered without COC on 14 Jan 2019

Hi [REDACTED]

Yesterday eskies were couriered from Hastings for the GIJPP EES to the lab without COCs. Please find attached COCs.

Can you please do me a favour and update the IDs by removing the bottom depth for each sample e.g. change CPT001_BH108_140119_0.0-0.1 to CPT001_BH108_140119_0.0?

Please analyse:

1. CPT029_BH10_140119_0.0= IWRG621
2. CPT029_BH10_140119_0.9= IWRG621
3. CPT001_BH109_140119_0.0= IWRG621
4. CPT001_BH109_140119_0.4 = IWRG621
5. CPT001_BH108_140119_0.0 = IWRG621
6. CPT001_BH108_140119_0.4 = IWRG621
7. CPT039_BH13_140119_0.0 = IWRG621
8. CPT039_BH13_140119_0.4 = IWRG621
9. CPT029_BH10_140119_0.4= SPOCAS (EA029)
10. CPT029_BH10_140119_0.9= SPOCAS (EA029)
11. CPT001_BH109_140119_0.9 = Chromium Suite (EA033)
12. CPT001_BH109_140119_1.4 = Chromium Suite (EA033)
13. CPT001_BH108_140119_0.4 = Chromium Suite (EA033)
14. CPT001_BH108_140119_1.4 = Chromium Suite (EA033)
15. CPT039_BH13_140119_0.4 = Chromium Suite (EA033)
16. CPT039_BH13_140119_1.4 = Chromium Suite (EA033)
17. QC150_140119 = IWRG621
18. QC250_140119 = IWRG621 (Triplicate, please forward to Eurofins)
19. QC350_100119 = IWRG621 water equivalent
20. QC450_100119 = TPH(C6-C9)/BTEXN
21. QC550_100119 = TPH(C6-C9)/BTEXN
22. QC551_100119 = TPH(C6-C9)/BTEXN

For the other eskies with COCs, please analyse:

1. CPT032_BH11_140119_0.2= IWRG621
2. CPT032_BH11_140119_1.5= IWRG621
3. CPT036B_BH12_140119_0.2= IWRG621
4. CPT036B_BH12_140119_1.5 = IWRG621
5. CPT032_BH11_140119_0.5 = Chromium Suite (EA033)
6. CPT032_BH11_140119_1.0 = Chromium Suite (EA033)
7. CPT036B_BH12_140119_0.5 = Chromium Suite (EA033)
8. CPT036B_BH12_140119_1.5 = Chromium Suite (EA033)
9. QC311_100119 = IWRG621 water equivalent
10. QC411_100119 = TPH(C6-C9)/BTEXN
11. QC518_100119 = TPH(C6-C9)/BTEXN
12. QC519_100119 = TPH(C6-C9)/BTEXN

Relinquished by
Rm (4th)
15/1/19
12-12

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**

Contact name: [REDACTED]

Project name: **GAS IMPORT JETTY PIPELINE PROJECT (GIJPP) EES**

Project ID: **60592634**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Jan 15, 2019 2:49 PM**

Eurofins | mgt reference: **635969**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 8.9 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : +61 3 8564 5000 or by e.mail: [REDACTED]

Results will be delivered electronically via e.mail to [REDACTED]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report 635969-S
Project name GAS IMPORT JETTY PIPELINE PROJECT (GIJPP) EES
Project ID 60592634
Received Date Jan 15, 2019

Client Sample ID			QC250_140119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja09541
Date Sampled			Jan 14, 2019
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
Volatile Organics			
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Volatile Organics			
1,1-Dichloroethane	0.5	mg/kg	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5

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Eurofins mgt Sample No.			M19-Ja09541
Date Sampled			Jan 14, 2019
Test/Reference	LOR	Unit	
Volatile Organics			
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	92
Toluene-d8 (surr.)	1	%	115
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			QC250_140119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja09541
Date Sampled			Jan 14, 2019
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	90
p-Terphenyl-d14 (surr.)	1	%	110
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorodate (surr.)	1	%	33
Tetrachloro-m-xylene (surr.)	1	%	112
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1

Client Sample ID			QC250_140119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja09541
Date Sampled			Jan 14, 2019
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls			
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchloredate (surr.)	1	%	33
Tetrachloro-m-xylene (surr.)	1	%	112
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	90
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride	100	mg/kg	< 100
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.3
% Moisture	1	%	14
Heavy Metals			
Arsenic	2	mg/kg	12
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	58
Copper	5	mg/kg	< 5
Lead	5	mg/kg	12
Mercury	0.1	mg/kg	0.2
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	11
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	5.9

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Jan 18, 2019	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Jan 18, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Jan 18, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Jan 18, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Jan 21, 2019	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Jan 18, 2019	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Jan 21, 2019	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Jan 18, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Jan 18, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Jan 16, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Project Name: GAS IMPORT JETTY PIPELINE PROJECT (GIJPP) EES
Project ID: 60592634

Order No.: 60592634
Report #: 635969
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Jan 15, 2019 2:49 PM
Due: Jan 22, 2019
Priority: 5 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	QC250_140119	Jan 14, 2019		Soil	M19-Ja09541	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
1,2,4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1,1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1,1,1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,1,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,3,5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1,2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1,3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	89			70-130	Pass	
TRH C10-C14	%	124			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	71			70-130	Pass	
1.1.1-Trichloroethane	%	75			70-130	Pass	
1.2-Dichlorobenzene	%	79			70-130	Pass	
1.2-Dichloroethane	%	80			70-130	Pass	
Benzene	%	78			70-130	Pass	
Ethylbenzene	%	81			70-130	Pass	
m&p-Xylenes	%	83			70-130	Pass	
Toluene	%	82			70-130	Pass	
Trichloroethene	%	81			70-130	Pass	
Xylenes - Total	%	79			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	73			70-130	Pass	
TRH C6-C10	%	83			70-130	Pass	
TRH >C10-C16	%	120			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	88			70-130	Pass	
Acenaphthylene	%	87			70-130	Pass	
Anthracene	%	107			70-130	Pass	
Benz(a)anthracene	%	75			70-130	Pass	
Benzo(a)pyrene	%	80			70-130	Pass	
Benzo(b&j)fluoranthene	%	91			70-130	Pass	
Benzo(g,h,i)perylene	%	89			70-130	Pass	
Benzo(k)fluoranthene	%	109			70-130	Pass	
Chrysene	%	81			70-130	Pass	
Dibenz(a,h)anthracene	%	93			70-130	Pass	
Fluoranthene	%	125			70-130	Pass	
Fluorene	%	94			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	118			70-130	Pass	
Naphthalene	%	88			70-130	Pass	
Phenanthrene	%	109			70-130	Pass	
Pyrene	%	120			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	80			70-130	Pass	
4.4'-DDD	%	110			70-130	Pass	
4.4'-DDE	%	105			70-130	Pass	
4.4'-DDT	%	89			70-130	Pass	
a-BHC	%	81			70-130	Pass	
Aldrin	%	78			70-130	Pass	
b-BHC	%	82			70-130	Pass	
d-BHC	%	76			70-130	Pass	
Dieldrin	%	99			70-130	Pass	
Endosulfan I	%	85			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	%	103			70-130	Pass	
Endosulfan sulphate	%	100			70-130	Pass	
Endrin	%	113			70-130	Pass	
Endrin aldehyde	%	86			70-130	Pass	
Endrin ketone	%	103			70-130	Pass	
g-BHC (Lindane)	%	79			70-130	Pass	
Heptachlor	%	116			70-130	Pass	
Heptachlor epoxide	%	105			70-130	Pass	
Hexachlorobenzene	%	118			70-130	Pass	
Methoxychlor	%	89			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	97			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	88			30-130	Pass	
2,4-Dichlorophenol	%	84			30-130	Pass	
2,4,5-Trichlorophenol	%	130			30-130	Pass	
2,4,6-Trichlorophenol	%	116			30-130	Pass	
2,6-Dichlorophenol	%	88			30-130	Pass	
4-Chloro-3-methylphenol	%	79			30-130	Pass	
Pentachlorophenol	%	89			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Methyl-4,6-dinitrophenol	%	108			30-130	Pass	
2-Methylphenol (o-Cresol)	%	77			30-130	Pass	
2-Nitrophenol	%	129			30-130	Pass	
2,4-Dimethylphenol	%	74			30-130	Pass	
2,4-Dinitrophenol	%	74			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	80			30-130	Pass	
4-Nitrophenol	%	86			30-130	Pass	
Dinoseb	%	95			30-130	Pass	
Phenol	%	81			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	106			70-130	Pass	
Cyanide (total)	%	105			70-130	Pass	
Fluoride	%	107			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	113			80-120	Pass	
Cadmium	%	109			80-120	Pass	
Chromium	%	103			80-120	Pass	
Copper	%	110			80-120	Pass	
Lead	%	110			80-120	Pass	
Mercury	%	118			75-125	Pass	
Molybdenum	%	109			80-120	Pass	
Nickel	%	110			80-120	Pass	
Selenium	%	106			80-120	Pass	
Silver	%	109			80-120	Pass	
Tin	%	118			80-120	Pass	
Zinc	%	114			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	M19-Ja05088	NCP	%	118		70-130	Pass	
TRH C10-C14	M19-Ja07952	NCP	%	110		70-130	Pass	
Spike - % Recovery								
Volatile Organics				Result 1				
1.1-Dichloroethene	M19-Ja05088	NCP	%	80		70-130	Pass	
1.1.1-Trichloroethane	M19-Ja05088	NCP	%	73		70-130	Pass	
1.2-Dichlorobenzene	M19-Ja05088	NCP	%	109		70-130	Pass	
1.2-Dichloroethane	M19-Ja05088	NCP	%	74		70-130	Pass	
Benzene	M19-Ja05088	NCP	%	81		70-130	Pass	
Ethylbenzene	M19-Ja05088	NCP	%	81		70-130	Pass	
m&p-Xylenes	M19-Ja05088	NCP	%	84		70-130	Pass	
o-Xylene	M19-Ja05088	NCP	%	84		70-130	Pass	
Toluene	M19-Ja05088	NCP	%	111		70-130	Pass	
Trichloroethene	M19-Ja05088	NCP	%	82		70-130	Pass	
Xylenes - Total	M19-Ja05088	NCP	%	84		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	M19-Ja07514	NCP	%	77		70-130	Pass	
TRH C6-C10	M19-Ja05088	NCP	%	104		70-130	Pass	
TRH >C10-C16	M19-Ja07952	NCP	%	107		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	S19-Ja10350	NCP	%	95		70-130	Pass	
Acenaphthylene	S19-Ja10350	NCP	%	95		70-130	Pass	
Anthracene	S19-Ja10350	NCP	%	123		70-130	Pass	
Benz(a)anthracene	S19-Ja10350	NCP	%	83		70-130	Pass	
Benzo(a)pyrene	S19-Ja10350	NCP	%	87		70-130	Pass	
Benzo(b&j)fluoranthene	S19-Ja10350	NCP	%	83		70-130	Pass	
Benzo(g,h,i)perylene	S19-Ja10350	NCP	%	75		70-130	Pass	
Benzo(k)fluoranthene	S19-Ja10350	NCP	%	90		70-130	Pass	
Chrysene	S19-Ja10350	NCP	%	78		70-130	Pass	
Dibenz(a,h)anthracene	S19-Ja10350	NCP	%	95		70-130	Pass	
Fluoranthene	S19-Ja10350	NCP	%	103		70-130	Pass	
Fluorene	S19-Ja10350	NCP	%	111		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S19-Ja10350	NCP	%	114		70-130	Pass	
Naphthalene	S19-Ja10350	NCP	%	80		70-130	Pass	
Phenanthrene	S19-Ja10350	NCP	%	120		70-130	Pass	
Pyrene	S19-Ja10350	NCP	%	100		70-130	Pass	
Spike - % Recovery								
Organochlorine Pesticides				Result 1				
Chlordanes - Total	M19-Ja07950	NCP	%	92		70-130	Pass	
4,4'-DDD	M19-Ja04861	NCP	%	118		70-130	Pass	
4,4'-DDE	M19-Ja04861	NCP	%	113		70-130	Pass	
4,4'-DDT	M19-Ja07747	NCP	%	130		70-130	Pass	
a-BHC	M19-Ja07950	NCP	%	107		70-130	Pass	
Aldrin	M19-Ja07950	NCP	%	105		70-130	Pass	
b-BHC	M19-Ja07950	NCP	%	80		70-130	Pass	
d-BHC	M19-Ja07950	NCP	%	90		70-130	Pass	
Dieldrin	M19-Ja07950	NCP	%	116		70-130	Pass	
Endosulfan I	M19-Ja07950	NCP	%	98		70-130	Pass	
Endosulfan II	M19-Ja07950	NCP	%	122		70-130	Pass	
Endosulfan sulphate	M19-Ja07950	NCP	%	124		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	M19-Ja04861	NCP	%	125			70-130	Pass	
Endrin aldehyde	M19-Ja07950	NCP	%	88			70-130	Pass	
Endrin ketone	M19-Ja07950	NCP	%	107			70-130	Pass	
g-BHC (Lindane)	M19-Ja07950	NCP	%	106			70-130	Pass	
Heptachlor	M19-Ja04861	NCP	%	96			70-130	Pass	
Heptachlor epoxide	M19-Ja04861	NCP	%	113			70-130	Pass	
Hexachlorobenzene	M19-Ja04861	NCP	%	80			70-130	Pass	
Methoxychlor	M19-Ja07747	NCP	%	122			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	S19-Ja10350	NCP	%	106			30-130	Pass	
2,4-Dichlorophenol	S19-Ja10350	NCP	%	116			30-130	Pass	
2,4,5-Trichlorophenol	S19-Ja10350	NCP	%	83			30-130	Pass	
2,4,6-Trichlorophenol	S19-Ja10350	NCP	%	83			30-130	Pass	
2,6-Dichlorophenol	S19-Ja10350	NCP	%	121			30-130	Pass	
4-Chloro-3-methylphenol	S19-Ja10350	NCP	%	115			30-130	Pass	
Pentachlorophenol	S19-Ja10350	NCP	%	50			30-130	Pass	
Tetrachlorophenols - Total	S19-Ja10350	NCP	%	129			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4,6-dinitrophenol	M19-Ja06003	NCP	%	115			30-130	Pass	
2-Methyl-4,6-dinitrophenol	S19-Ja10350	NCP	%	41			30-130	Pass	
2-Methylphenol (o-Cresol)	S19-Ja10350	NCP	%	90			30-130	Pass	
2-Nitrophenol	S19-Ja10350	NCP	%	51			30-130	Pass	
2,4-Dimethylphenol	S19-Ja10350	NCP	%	92			30-130	Pass	
2,4-Dinitrophenol	M19-Ja06003	NCP	%	51			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S19-Ja10350	NCP	%	93			30-130	Pass	
4-Nitrophenol	S19-Ja10350	NCP	%	74			30-130	Pass	
Dinoseb	S19-Ja10350	NCP	%	40			30-130	Pass	
Phenol	S19-Ja10350	NCP	%	91			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M19-Ja12598	NCP	%	111			70-130	Pass	
Cyanide (total)	M19-Ja13283	NCP	%	90			70-130	Pass	
Fluoride	M19-Ja09541	CP	%	123			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B19-Ja11691	NCP	%	92			75-125	Pass	
Cadmium	B19-Ja11691	NCP	%	112			75-125	Pass	
Chromium	B19-Ja11691	NCP	%	100			75-125	Pass	
Copper	B19-Ja11691	NCP	%	99			75-125	Pass	
Lead	B19-Ja11691	NCP	%	109			75-125	Pass	
Mercury	B19-Ja11691	NCP	%	107			70-130	Pass	
Molybdenum	B19-Ja11691	NCP	%	96			75-125	Pass	
Nickel	B19-Ja11691	NCP	%	97			75-125	Pass	
Selenium	B19-Ja11691	NCP	%	85			75-125	Pass	
Silver	B19-Ja11691	NCP	%	100			75-125	Pass	
Tin	B19-Ja11691	NCP	%	98			75-125	Pass	
Zinc	B19-Ja11691	NCP	%	113			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M19-Ja13251	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M19-Ja09963	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M19-Ja09963	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M19-Ja09963	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.2.4-Trichlorobenzene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M19-Ja13251	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	M19-Ja13251	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M19-Ja13251	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
Methylene Chloride	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
o-Xylene	M19-Ja13251	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Styrene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Toluene	M19-Ja13251	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
trans-1,2-Dichloroethene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1,3-Dichloropropene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Xylenes - Total	M19-Ja13251	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M19-Ja13251	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	M19-Ja13251	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M19-Ja09963	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	M19-Ja09963	NCP	mg/kg	< 100		<1	30%	Pass
TRH >C34-C40	M19-Ja09963	NCP	mg/kg	< 100		<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S19-Ja07239	NCP	mg/kg	0.5	< 0.5	39	30%	Fail
Chrysene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S19-Ja07239	NCP	mg/kg	0.6	< 0.5	25	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S19-Ja07239	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S19-Ja07239	NCP	mg/kg	0.09	0.07	32	30%	Fail
b-BHC	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S19-Ja07239	NCP	mg/kg	0.09	0.08	10	30%	Pass
Endosulfan I	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Heptachlor	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S19-Ja07239	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	S19-Ja07239	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	S19-Ja07239	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	S19-Ja07239	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	S19-Ja07239	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	S19-Ja07239	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	S19-Ja07239	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	S19-Ja07239	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	S19-Ja07239	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	S19-Ja07239	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	S19-Ja07239	NCP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	S19-Ja07239	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	S19-Ja07239	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	S19-Ja07239	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	S19-Ja07239	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M19-Ja12601	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Cyanide (total)	M19-Ja09547	NCP	mg/kg	6.1	9.2	40	30%	Fail
Fluoride	M19-Ja09958	NCP	mg/kg	< 100	< 100	<1	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	S19-Ja08686	NCP	pH Units	8.7	8.7	pass	30%	Pass
% Moisture	M19-Ja07785	NCP	%	5.8	6.1	4.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	B19-Ja11690	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	B19-Ja11690	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	B19-Ja11690	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Copper	B19-Ja11690	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	B19-Ja11690	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Mercury	B19-Ja11690	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	B19-Ja11690	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	B19-Ja11690	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Selenium	B19-Ja11690	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	B19-Ja11690	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tin	B19-Ja11690	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	B19-Ja11690	NCP	mg/kg	5.3	5.0	5.0	30%	Pass

Comments






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)




General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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From: [REDACTED]
Sent: Wednesday, 16 January 2019 3:11 PM
To: [REDACTED]
Subject: RE: EM1900447/EM1900448 - AECOMAU - 60592634

Hi [REDACTED]

Please analyse:

EM1900447

1. CPT002_BH102_150119_0.0= IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
2. CPT002_BH102_150119_0.5 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
3. CPT002_BH102_150119_1.5 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
4. CPT025_BH09_150119_0.0= IWRG621
5. CPT025_BH09_150119_1.0= IWRG621
6. CPT049B_BH17_150119_0.0= IWRG621
7. CPT049B_BH17_150119_1.0= IWRG621
8. CPT002_BH102_150119_0.5 = Chromium Suite (EA033)
9. CPT002_BH102_150119_2.5 Chromium Suite (EA033)
10. CPT025_BH09_150119_0.5 = Chromium Suite (EA033)
11. CPT025_BH09_150119_1.0 = Chromium Suite (EA033)
12. CPT049B_BH17_150119_0.5 = Chromium Suite (EA033)
13. CPT049B_BH17_150119_1.5 = Chromium Suite (EA033)
14. QC151_150119 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
15. QC251_150119 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL) (Triplicate, please forward to Eurofins)
16. QC351_150119 = IWRG621 water equivalent, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
17. QC451_150119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
18. QC552_150119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
19. QC553_150119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)

Item 18 & 19 – analyse only the Trip Blank in esky that contains CPT002_BH102 samples.

EM1900448

1. CPT008_BH02_150119_0.2 = IWRG621
2. CPT008_BH02_150119_1.0 = IWRG621
3. CPT045_BH15_150119_0.5 = IWRG621
4. CPT045_BH15_150119_1.0 = IWRG621
5. CPT000_BH08_150119_0.2 = IWRG621
6. CPT000_BH08_150119_1.0 = IWRG621
7. CPT056_BH19_150119_0.2 = IWRG621
8. CPT056_BH19_150119_0.5 = IWRG621
9. CPT008_BH02_150119_0.5 = Chromium Suite (EA033)
10. CPT008_BH02_150119_1.5 = Chromium Suite (EA033)
11. CPT045_BH15_150119_1.0 = Chromium Suite (EA033)
12. CPT045_BH15_150119_1.5 = Chromium Suite (EA033)
13. CPT000_BH08_150119_ = Chromium Suite (EA033)
14. CPT000_BH08_150119_ Chromium Suite (EA033)
15. CPT056_BH19_150119_0.5 = Chromium Suite (EA033)
16. CPT056_BH19_150119_2.0 = Chromium Suite (EA033)
17. QC103_150119 = IWRG621
18. QC203_150119 = IWRG621 (Triplicate, please forward to Eurofins)

Relinquished by
Full (M)
17/1/19 C
1.0/μ

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**
Contact name: [REDACTED]
Project name: **GAS IMPORT JETTY PIPELINE PROJECT (GIJPP) EES**
Project ID: **60592634**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Jan 17, 2019 3:00 PM**
Eurofins | mgt reference: **636566**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 15.2 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : +61 3 8564 5000 or by e.mail: [REDACTED]

Results will be delivered electronically via e.mail to [REDACTED]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report 636566-S
Project name GAS IMPORT JETTY PIPELINE PROJECT (GIJPP) EES
Project ID 60592634
Received Date Jan 17, 2019

Client Sample ID			QC251_15119	QC203_150119
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			M19-Ja14273	M19-Ja15146
Date Sampled			Jan 15, 2019	Jan 15, 2019
Test/Reference	LOR	Unit		
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5
Chromium (hexavalent)	1	mg/kg	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5
Fluoride	100	mg/kg	340	140
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.0	6.4
% Moisture	1	%	19	18
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50
Volatile Organics				
1,1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			QC251_15119	QC203_150119
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			M19-Ja14273	M19-Ja15146
Date Sampled			Jan 15, 2019	Jan 15, 2019
Test/Reference	LOR	Unit		
Volatile Organics				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5
cis-1,2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
cis-1,3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1
trans-1,2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
trans-1,3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	83	93
Toluene-d8 (surr.)	1	%	79	99
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100

Client Sample ID			QC251_15119	QC203_150119
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			M19-Ja14273	M19-Ja15146
Date Sampled			Jan 15, 2019	Jan 15, 2019
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	110	92
p-Terphenyl-d14 (surr.)	1	%	84	147
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	int	135
Tetrachloro-m-xylene (surr.)	1	%	145	108

Client Sample ID			QC251_15119	QC203_150119
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			M19-Ja14273	M19-Ja15146
Date Sampled			Jan 15, 2019	Jan 15, 2019
Test/Reference	LOR	Unit		
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	int	135
Tetrachloro-m-xylene (surr.)	1	%	145	108
Phenols (Halogenated)				
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1	< 1
Total Halogenated Phenol*	1	mg/kg	< 1	< 1
Phenols (non-Halogenated)				
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20
Phenol-d6 (surr.)	1	%	106	90
PFASs Summations				
Sum (PFHxS + PFOS)*	1	ug/kg	< 1	-
Sum of US EPA PFAS (PFOS + PFOA)*	1	ug/kg	< 1	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	1	ug/kg	< 1	-
Sum of WA DWER PFAS (n=10)*	1	ug/kg	< 1	-
Sum of PFASs (n=28)*	5	ug/kg	< 5	-
Perfluoroalkyl carboxylic acids (PFCAs) - Trace				
Perfluorobutanoic acid (PFBA) ^{N11}	0.5	ug/kg	< 0.5	-
Perfluoropentanoic acid (PFPeA) ^{N11}	0.1	ug/kg	< 0.1	-
Perfluorohexanoic acid (PFHxA) ^{N11}	0.1	ug/kg	< 0.1	-
Perfluoroheptanoic acid (PFHpA) ^{N11}	0.1	ug/kg	< 0.1	-
Perfluorooctanoic acid (PFOA) ^{N11}	0.1	ug/kg	< 0.1	-
Perfluorononanoic acid (PFNA) ^{N11}	0.1	ug/kg	< 0.1	-
Perfluorodecanoic acid (PFDA) ^{N11}	0.1	ug/kg	< 0.1	-
Perfluoroundecanoic acid (PFUnDA) ^{N11}	0.1	ug/kg	< 0.1	-
Perfluorododecanoic acid (PFDoDA) ^{N11}	0.1	ug/kg	< 0.1	-

Client Sample ID			QC251_15119	QC203_150119
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			M19-Ja14273	M19-Ja15146
Date Sampled			Jan 15, 2019	Jan 15, 2019
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs) - Trace				
Perfluorotridecanoic acid (PFTTrDA) ^{N15}	0.1	ug/kg	< 0.1	-
Perfluorotetradecanoic acid (PFTTeDA) ^{N11}	0.1	ug/kg	< 0.1	-
13C4-PFBA (surr.)	1	%	77	-
13C5-PFPeA (surr.)	1	%	118	-
13C5-PFHxA (surr.)	1	%	113	-
13C4-PFHpA (surr.)	1	%	96	-
13C8-PFOA (surr.)	1	%	93	-
13C5-PFNA (surr.)	1	%	113	-
13C6-PFDA (surr.)	1	%	101	-
13C2-PFUnDA (surr.)	1	%	84	-
13C2-PFDoDA (surr.)	1	%	64	-
13C2-PFTeDA (surr.)	1	%	69	-
Perfluoroalkyl sulfonic acids (PFSA)s - Trace				
Perfluorobutanesulfonic acid (PFBS) ^{N11}	0.1	ug/kg	< 0.1	-
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	0.1	ug/kg	< 0.1	-
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	0.1	ug/kg	< 0.1	-
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	0.1	ug/kg	< 0.1	-
Perfluorooctanesulfonic acid (PFOS) ^{N11}	0.1	ug/kg	0.1	-
Perfluorodecanesulfonic acid (PFDS) ^{N15}	0.1	ug/kg	< 0.1	-
13C3-PFBS (surr.)	1	%	121	-
18O2-PFHxS (surr.)	1	%	104	-
13C8-PFOS (surr.)	1	%	129	-
Perfluoroalkyl sulfonamido substances - Trace				
Perfluorooctane sulfonamide (FOSA) ^{N11}	0.5	ug/kg	< 0.5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	0.5	ug/kg	< 0.5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	0.5	ug/kg	< 0.5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) ^{N11}	0.5	ug/kg	< 0.5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) ^{N11}	0.5	ug/kg	< 0.5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	0.5	ug/kg	< 0.5	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	0.5	ug/kg	< 0.5	-
13C8-FOSA (surr.)	1	%	92	-
D3-N-MeFOSA (surr.)	1	%	68	-
D5-N-EtFOSA (surr.)	1	%	18	-
D7-N-MeFOSE (surr.)	1	%	67	-
D9-N-EtFOSE (surr.)	1	%	59	-
D5-N-EtFOSAA (surr.)	1	%	56	-
D3-N-MeFOSAA (surr.)	1	%	46	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)s - Trace				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	0.1	ug/kg	< 0.1	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11}	0.5	ug/kg	< 0.5	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	0.1	ug/kg	< 0.1	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N15}	0.1	ug/kg	< 0.1	-
13C2-4:2 FTSA (surr.)	1	%	142	-

Client Sample ID			QC251_15119	QC203_150119
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			M19-Ja14273	M19-Ja15146
Date Sampled			Jan 15, 2019	Jan 15, 2019
Test/Reference	LOR	Unit		
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)- Trace				
13C2-6:2 FTSA (surr.)	1	%	126	-
13C2-8:2 FTSA (surr.)	1	%	60	-
Heavy Metals				
Arsenic	2	mg/kg	< 2	19
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	36	17
Copper	5	mg/kg	< 5	< 5
Lead	5	mg/kg	8.3	< 5
Mercury	0.1	mg/kg	0.1	< 0.1
Molybdenum	5	mg/kg	< 5	9.2
Nickel	5	mg/kg	5.5	< 5
Selenium	2	mg/kg	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10
Zinc	5	mg/kg	< 5	< 5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
1.2.4-Trichlorobenzene	Melbourne	Jan 23, 2019	14 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Hexachlorobutadiene	Melbourne	Jan 23, 2019	14 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Chromium (hexavalent)	Melbourne	Jan 24, 2019	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Jan 24, 2019	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Jan 23, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Jan 23, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Jan 23, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Jan 23, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals IWRG 621 : Metals M12	Melbourne	Jan 23, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Jan 21, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs) - Trace			
Perfluoroalkyl carboxylic acids (PFCAs) - Trace	Brisbane	Jan 22, 2019	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFASs)- Trace	Brisbane	Jan 22, 2019	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances- Trace	Brisbane	Jan 22, 2019	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace	Brisbane	Jan 22, 2019	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Project Name: GAS IMPORT JETTY PIPELINE PROJECT (GIJPP) EES
Project ID: 60592634

Order No.:
Report #: 636566
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Jan 17, 2019 3:00 PM
Due: Jan 24, 2019
Priority: 5 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IW/RG 621 (Solids)	Per- and Polyfluoralkyl Substances (PFASs) - Trace
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								X
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	QC251_15119	Jan 15, 2019	9:45AM	Soil	M19-Ja14273	X	X	X
2	QC203_150119	Jan 15, 2019	9:45AM	Soil	M19-Ja15146	X	X	
Test Counts						2	2	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPa, PFHx, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
1.2.4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1,2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1,3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs) - Trace							
Perfluorobutanoic acid (PFBA)	ug/kg	< 0.5			0.5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 0.1			0.1	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 0.1			0.1	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 0.1			0.1	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 0.1			0.1	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 0.1			0.1	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 0.1			0.1	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 0.1			0.1	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 0.1			0.1	Pass	
Perfluorotridecanoic acid (PFTTrDA)	ug/kg	< 0.1			0.1	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl sulfonic acids (PFSA)s- Trace							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 0.1			0.1	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 0.1			0.1	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 0.1			0.1	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 0.1			0.1	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 0.1			0.1	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 0.1			0.1	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances- Trace							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 0.5			0.5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 0.5			0.5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 0.5			0.5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 0.5			0.5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 0.5			0.5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 0.5			0.5	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 0.5			0.5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)s- Trace							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 0.1			0.1	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 0.5			0.5	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 0.1			0.1	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	110			70-130	Pass	
Cyanide (total)	%	84			70-130	Pass	
Fluoride	%	109			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	97			70-130	Pass	
TRH C10-C14	%	128			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	80			70-130	Pass	
1.1.1-Trichloroethane	%	91			70-130	Pass	
1.2-Dichlorobenzene	%	106			70-130	Pass	
1.2-Dichloroethane	%	99			70-130	Pass	
Benzene	%	99			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
m&p-Xylenes	%	103			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	%	101			70-130	Pass	
Trichloroethene	%	94			70-130	Pass	
Xylenes - Total	%	103			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	86			70-130	Pass	
TRH C6-C10	%	91			70-130	Pass	
TRH >C10-C16	%	123			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	117			70-130	Pass	
Acenaphthylene	%	121			70-130	Pass	
Anthracene	%	102			70-130	Pass	
Benz(a)anthracene	%	109			70-130	Pass	
Benzo(a)pyrene	%	125			70-130	Pass	
Benzo(b&j)fluoranthene	%	121			70-130	Pass	
Benzo(g,h,i)perylene	%	92			70-130	Pass	
Benzo(k)fluoranthene	%	120			70-130	Pass	
Chrysene	%	122			70-130	Pass	
Dibenz(a,h)anthracene	%	90			70-130	Pass	
Fluoranthene	%	98			70-130	Pass	
Fluorene	%	122			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	86			70-130	Pass	
Naphthalene	%	120			70-130	Pass	
Phenanthrene	%	118			70-130	Pass	
Pyrene	%	99			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	105			70-130	Pass	
4,4'-DDD	%	94			70-130	Pass	
4,4'-DDE	%	119			70-130	Pass	
4,4'-DDT	%	84			70-130	Pass	
a-BHC	%	105			70-130	Pass	
Aldrin	%	97			70-130	Pass	
b-BHC	%	111			70-130	Pass	
d-BHC	%	125			70-130	Pass	
Dieldrin	%	115			70-130	Pass	
Endosulfan I	%	122			70-130	Pass	
Endosulfan II	%	120			70-130	Pass	
Endosulfan sulphate	%	88			70-130	Pass	
Endrin	%	80			70-130	Pass	
Endrin aldehyde	%	78			70-130	Pass	
Endrin ketone	%	116			70-130	Pass	
g-BHC (Lindane)	%	124			70-130	Pass	
Heptachlor	%	92			70-130	Pass	
Heptachlor epoxide	%	82			70-130	Pass	
Hexachlorobenzene	%	120			70-130	Pass	
Methoxychlor	%	95			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	88			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	109			30-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2,4-Dichlorophenol	%	101			30-130	Pass	
2,4,5-Trichlorophenol	%	104			30-130	Pass	
2,4,6-Trichlorophenol	%	92			30-130	Pass	
2,6-Dichlorophenol	%	108			30-130	Pass	
4-Chloro-3-methylphenol	%	102			30-130	Pass	
Pentachlorophenol	%	54			30-130	Pass	
Tetrachlorophenols - Total	%	113			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	%	41			30-130	Pass	
2-Methyl-4,6-dinitrophenol	%	80			30-130	Pass	
2-Methylphenol (o-Cresol)	%	112			30-130	Pass	
2-Nitrophenol	%	116			30-130	Pass	
2,4-Dimethylphenol	%	108			30-130	Pass	
2,4-Dinitrophenol	%	70			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	128			30-130	Pass	
4-Nitrophenol	%	125			30-130	Pass	
Dinoseb	%	88			30-130	Pass	
Phenol	%	110			30-130	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs) - Trace							
Perfluorobutanoic acid (PFBA)	%	91			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	116			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	81			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	102			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	121			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	113			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	112			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	101			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	119			50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	%	95			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	124			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSA)s- Trace							
Perfluorobutanesulfonic acid (PFBS)	%	78			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	88			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	81			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	70			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	104			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	91			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances- Trace							
Perfluorooctane sulfonamide (FOSA)	%	82			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	116			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	92			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	122			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	74			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	129			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	102			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)s- Trace							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	122			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	114			50-150	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)				%	135			50-150	Pass	
LCS - % Recovery										
Heavy Metals										
Arsenic				%	114			80-120	Pass	
Cadmium				%	110			80-120	Pass	
Chromium				%	119			80-120	Pass	
Copper				%	117			80-120	Pass	
Lead				%	118			80-120	Pass	
Mercury				%	113			75-125	Pass	
Molybdenum				%	114			80-120	Pass	
Nickel				%	115			80-120	Pass	
Selenium				%	113			80-120	Pass	
Silver				%	115			80-120	Pass	
Tin				%	118			80-120	Pass	
Zinc				%	115			80-120	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
					Result 1					
Chromium (hexavalent)	M19-Ja14681	NCP		%	119			70-130	Pass	
Cyanide (total)	M19-Ja19082	NCP		%	66			70-130	Fail	Q08
Fluoride	M19-Ja14705	NCP		%	117			70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1					
TRH C6-C9	M19-Ja14032	NCP		%	80			70-130	Pass	
TRH C10-C14	S19-Ja11426	NCP		%	75			70-130	Pass	
Spike - % Recovery										
Volatile Organics					Result 1					
1.1.1-Trichloroethane	M19-Ja12801	NCP		%	89			70-130	Pass	
1.2-Dichlorobenzene	M19-Ja12801	NCP		%	83			70-130	Pass	
1.2-Dichloroethane	M19-Ja12801	NCP		%	108			70-130	Pass	
Benzene	M19-Ja12801	NCP		%	101			70-130	Pass	
Ethylbenzene	M19-Ja12801	NCP		%	92			70-130	Pass	
m&p-Xylenes	M19-Ja12801	NCP		%	93			70-130	Pass	
o-Xylene	M19-Ja12801	NCP		%	94			70-130	Pass	
Toluene	M19-Ja12801	NCP		%	106			70-130	Pass	
Trichloroethene	M19-Ja12801	NCP		%	98			70-130	Pass	
Xylenes - Total	M19-Ja12801	NCP		%	93			70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1					
Naphthalene	M19-Ja14032	NCP		%	77			70-130	Pass	
TRH C6-C10	M19-Ja14032	NCP		%	76			70-130	Pass	
TRH >C10-C16	S19-Ja11426	NCP		%	78			70-130	Pass	
Spike - % Recovery										
Polycyclic Aromatic Hydrocarbons					Result 1					
Acenaphthene	M19-Ja11635	NCP		%	122			70-130	Pass	
Acenaphthylene	M19-Ja11635	NCP		%	126			70-130	Pass	
Anthracene	M19-Ja11635	NCP		%	97			70-130	Pass	
Benz(a)anthracene	M19-Ja11635	NCP		%	116			70-130	Pass	
Benzo(a)pyrene	M19-Ja11635	NCP		%	115			70-130	Pass	
Benzo(b&j)fluoranthene	M19-Ja11635	NCP		%	112			70-130	Pass	
Benzo(g,h,i)perylene	M19-Ja11635	NCP		%	120			70-130	Pass	
Benzo(k)fluoranthene	M19-Ja11635	NCP		%	92			70-130	Pass	
Chrysene	M19-Ja11635	NCP		%	88			70-130	Pass	
Dibenz(a,h)anthracene	M19-Ja11635	NCP		%	119			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluoranthene	M19-Ja11635	NCP	%	96			70-130	Pass	
Fluorene	M19-Ja11635	NCP	%	121			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M19-Ja11635	NCP	%	106			70-130	Pass	
Naphthalene	M19-Ja11635	NCP	%	112			70-130	Pass	
Phenanthrene	M19-Ja11635	NCP	%	117			70-130	Pass	
Pyrene	M19-Ja11635	NCP	%	98			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	K19-Ja01828	NCP	%	83			70-130	Pass	
4.4'-DDD	K19-Ja03450	NCP	%	84			70-130	Pass	
4.4'-DDE	K19-Ja03450	NCP	%	111			70-130	Pass	
4.4'-DDT	K19-Ja03450	NCP	%	91			70-130	Pass	
a-BHC	K19-Ja03450	NCP	%	92			70-130	Pass	
Aldrin	K19-Ja03450	NCP	%	98			70-130	Pass	
b-BHC	K19-Ja03450	NCP	%	90			70-130	Pass	
d-BHC	K19-Ja03450	NCP	%	93			70-130	Pass	
Dieldrin	K19-Ja03450	NCP	%	106			70-130	Pass	
Endosulfan I	K19-Ja03450	NCP	%	106			70-130	Pass	
Endosulfan II	K19-Ja03450	NCP	%	108			70-130	Pass	
Endosulfan sulphate	K19-Ja03450	NCP	%	89			70-130	Pass	
Endrin	K19-Ja03450	NCP	%	101			70-130	Pass	
Endrin aldehyde	K19-Ja03450	NCP	%	94			70-130	Pass	
Endrin ketone	K19-Ja03450	NCP	%	109			70-130	Pass	
g-BHC (Lindane)	K19-Ja03450	NCP	%	97			70-130	Pass	
Heptachlor	K19-Ja03450	NCP	%	76			70-130	Pass	
Heptachlor epoxide	K19-Ja03450	NCP	%	93			70-130	Pass	
Hexachlorobenzene	K19-Ja03450	NCP	%	108			70-130	Pass	
Methoxychlor	K19-Ja03450	NCP	%	121			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	M19-Ja11972	NCP	%	98			70-130	Pass	
Aroclor-1260	M19-Ja11972	NCP	%	98			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M19-Ja13424	NCP	%	97			30-130	Pass	
2.4-Dichlorophenol	M19-Ja13424	NCP	%	91			30-130	Pass	
2.4.5-Trichlorophenol	M19-Ja13424	NCP	%	82			30-130	Pass	
2.4.6-Trichlorophenol	M19-Ja13424	NCP	%	92			30-130	Pass	
2.6-Dichlorophenol	M19-Ja13424	NCP	%	90			30-130	Pass	
4-Chloro-3-methylphenol	M19-Ja13424	NCP	%	97			30-130	Pass	
Pentachlorophenol	M19-Ja13424	NCP	%	92			30-130	Pass	
Tetrachlorophenols - Total	M19-Ja13424	NCP	%	121			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M19-Ja13424	NCP	%	43			30-130	Pass	
2-Methyl-4.6-dinitrophenol	M19-Ja13424	NCP	%	91			30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Ja13424	NCP	%	101			30-130	Pass	
2-Nitrophenol	M19-Ja13424	NCP	%	92			30-130	Pass	
2.4-Dimethylphenol	M19-Ja13424	NCP	%	95			30-130	Pass	
2.4-Dinitrophenol	M19-Ja13424	NCP	%	70			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Ja13424	NCP	%	119			30-130	Pass	
4-Nitrophenol	M19-Ja13424	NCP	%	109			30-130	Pass	
Dinoseb	M19-Ja13424	NCP	%	94			30-130	Pass	
Phenol	M19-Ja13424	NCP	%	98			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Perfluoroalkyl carboxylic acids (PFCAs) - Trace				Result 1				
Perfluorobutanoic acid (PFBA)	B19-Ja17276	NCP	%	96		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B19-Ja17276	NCP	%	108		50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B19-Ja17276	NCP	%	88		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B19-Ja17276	NCP	%	104		50-150	Pass	
Perfluorooctanoic acid (PFOA)	B19-Ja17276	NCP	%	118		50-150	Pass	
Perfluorononanoic acid (PFNA)	B19-Ja17276	NCP	%	103		50-150	Pass	
Perfluorodecanoic acid (PFDA)	B19-Ja17276	NCP	%	118		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B19-Ja17276	NCP	%	96		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B19-Ja17276	NCP	%	102		50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	B19-Ja17276	NCP	%	94		50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B19-Ja17276	NCP	%	121		50-150	Pass	
Spike - % Recovery								
Perfluoroalkyl sulfonic acids (PFSAs)- Trace				Result 1				
Perfluorobutanesulfonic acid (PFBS)	B19-Ja17276	NCP	%	80		50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B19-Ja17276	NCP	%	77		50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B19-Ja17276	NCP	%	80		50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B19-Ja17276	NCP	%	61		50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B19-Ja17276	NCP	%	91		50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B19-Ja17276	NCP	%	86		50-150	Pass	
Spike - % Recovery								
Perfluoroalkyl sulfonamido substances- Trace				Result 1				
Perfluorooctane sulfonamide (FOSA)	B19-Ja17276	NCP	%	88		50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B19-Ja17276	NCP	%	123		50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B19-Ja17276	NCP	%	104		50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B19-Ja17276	NCP	%	107		50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B19-Ja17276	NCP	%	115		50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B19-Ja17276	NCP	%	123		50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B19-Ja17276	NCP	%	116		50-150	Pass	
Spike - % Recovery								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)- Trace				Result 1				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B19-Ja17276	NCP	%	100		50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B19-Ja17276	NCP	%	113		50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B19-Ja17276	NCP	%	132		50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B19-Ja17276	NCP	%	100		50-150	Pass	
Spike - % Recovery								

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heavy Metals				Result 1					
Arsenic	M19-Ja13396	NCP	%	86			75-125	Pass	
Cadmium	M19-Ja13396	NCP	%	90			75-125	Pass	
Chromium	M19-Ja13396	NCP	%	83			75-125	Pass	
Copper	M19-Ja13396	NCP	%	88			75-125	Pass	
Lead	M19-Ja13396	NCP	%	93			75-125	Pass	
Mercury	M19-Ja13396	NCP	%	98			70-130	Pass	
Molybdenum	M19-Ja13396	NCP	%	90			75-125	Pass	
Nickel	M19-Ja13396	NCP	%	85			75-125	Pass	
Selenium	M19-Ja13396	NCP	%	86			75-125	Pass	
Silver	M19-Ja13396	NCP	%	95			75-125	Pass	
Tin	M19-Ja13396	NCP	%	93			75-125	Pass	
Zinc	M19-Ja13396	NCP	%	86			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
1,2,4-Trichlorobenzene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chromium (hexavalent)	M19-Ja14678	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Fluoride	M19-Ja12797	NCP	mg/kg	250	350	32	30%	Fail	Q15
pH (1:5 Aqueous extract at 25°C as rec.)	M19-Ja13143	NCP	pH Units	10	10	pass	30%	Pass	
% Moisture	M19-Ja17038	NCP	%	19	19	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	P19-Ja21036	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S19-Ja11306	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S19-Ja11306	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S19-Ja11306	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1,1-Dichloroethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1-Dichloroethene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,1-Trichloroethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,1,2-Tetrachloroethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,2-Trichloroethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,2,2-Tetrachloroethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2-Dibromoethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2-Dichlorobenzene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2-Dichloroethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2-Dichloropropane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2,3-Trichloropropane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2,4-Trimethylbenzene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,3-Dichlorobenzene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,3-Dichloropropane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,3,5-Trimethylbenzene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,4-Dichlorobenzene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	P19-Ja21036	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
Bromochloromethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromodichloromethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromoform	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromomethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon disulfide	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon Tetrachloride	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chlorobenzene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroform	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloromethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.2-Dichloroethene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.3-Dichloropropene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromochloromethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromomethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dichlorodifluoromethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Ethylbenzene	P19-Ja21036	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Iodomethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Isopropyl benzene (Cumene)	P19-Ja21036	NCP	mg/kg	< 0.5		<1	30%	Pass
m&p-Xylenes	P19-Ja21036	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methylene Chloride	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
o-Xylene	P19-Ja21036	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Styrene	P19-Ja21036	NCP	mg/kg	< 0.5		<1	30%	Pass
Tetrachloroethene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Toluene	P19-Ja21036	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
trans-1.2-Dichloroethene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1.3-Dichloropropene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Xylenes - Total	P19-Ja21036	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	P19-Ja21036	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	P19-Ja21036	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	S19-Ja11306	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S19-Ja11306	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S19-Ja11306	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S19-Ja11385	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S19-Ja11385	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	S19-Ja11385	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	S19-Ja11385	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	S19-Ja11385	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	S19-Ja11385	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	S19-Ja11385	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	S19-Ja11385	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	S19-Ja11385	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	S19-Ja11385	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	S19-Ja11385	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	S19-Ja11385	NCP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	S19-Ja11385	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	S19-Ja11385	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	S19-Ja11385	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	S19-Ja11385	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs) - Trace				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanoic acid (PFNA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass

Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs) - Trace				Result 1	Result 2	RPD		
Perfluorotridecanoic acid (PFTTrDA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFASs)- Trace				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	B19-Ja12176	NCP	ug/kg	19	23	19	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	B19-Ja17275	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances- Trace				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B19-Ja12176	NCP	ug/kg	< 10	< 10	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B19-Ja12176	NCP	ug/kg	< 10	< 10	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)- Trace				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B19-Ja17275	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B19-Ja17275	NCP	ug/kg	< 10	< 10	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M19-Ja13991	NCP	mg/kg	3.0	2.9	1.0	30%	Pass
Cadmium	M19-Ja13991	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M19-Ja13991	NCP	mg/kg	50	43	15	30%	Pass
Copper	M19-Ja13991	NCP	mg/kg	19	21	12	30%	Pass
Lead	M19-Ja13991	NCP	mg/kg	11	11	5.0	30%	Pass
Mercury	M19-Ja13991	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M19-Ja13991	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M19-Ja13991	NCP	mg/kg	74	72	3.0	30%	Pass
Selenium	M19-Ja13991	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M19-Ja13991	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tin	M19-Ja13991	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M19-Ja13991	NCP	mg/kg	35	42	18	30%	Pass

Comments



Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (QLD)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)



General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

#8

CONSULTANT: AECOM				ADDRESS / OFFICE:		SAMPLER: POPPM		Destination Laboratory	
PROJECT NUMBER & TASK CODE: 60592634				SITE: Gas Import Jetty Pipeline Project (GIMP) EIS		MOBILE: [REDACTED]		PHONE: [REDACTED]	
RESULTS REQUIRED (Date): 1				P.O. NO.:		EMAIL REPORT TO: [REDACTED]		ALS	
FOR LABORATORY USE ONLY				COMMENTS / SPECIAL HANDLING, STORAGE OR DISPOSAL:		Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.			
COOLER SEAL (check appropriate)				No					
SAMPLE TEMPERATURE				No					
CHILLED: Yes				No					
SAMPLE INFORMATION (note: S = Soil, W = Water)									
ALS ID		SAMPLE ID		MATRIX		DATE		Time	
20		QC152-160119		S		16/1/19		10:00	
21		QC252-160119		S		16/1/19		11:45	
22		QC352-160119		W		16/1/19		14:30	
23		QC452-160119		W		16/1/19		14:30	
24		QC552-160119		W		16/1/19		14:30	
25		CPT051A-BH10-9.55		16/1/19		14:00		XRFAS JALPAS.53	
26		CPT051A-BH10-1.05		16/1/19		14:10		✓	
27		CPT051A-BH10-1.55		16/1/19		14:15		✓	
28		CPT051A-BH10-2.05		16/1/19		14:20		✓	
29		CPT051A-BH10-2.55		16/1/19		14:30		✓	
30		QC556-160119		W		16:30		2 bottles ✓	
RECEIVED BY: [REDACTED]									
RECEIVED BY: [REDACTED]									
METHOD OF SHIPMENT									
Cont Note No:									
Transport Co:									

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Via HCl Preserved; VB = VOA Via Sodium Bisulphate Preserved; VS = VOA Via Sulfuric Preserved; AV = Airfreight Unpreserved Via SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; Soil Container Codes: Jar = Unpreserved glass jar

Relinquished by R (ANZ) 1.58pm 18/1/19

541R R41-1
181119 3:00pm
636619

#18

From: [REDACTED]
Sent: Thursday, 17 January 2019 3:48 PM
To: [REDACTED]
Subject: RE: EM1900531 - AECOMAU - 60592634

Hi [REDACTED]

Please analyse:

1. CPT002_BH101_160119_0.0 = IWRG621 - PFAS Full Suite Low Level - 28 Analytes (EP231X)
2. CPT002_BH101_160119_0.5 = IWRG621 - PFAS Full Suite Low Level - 28 Analytes (EP231X)
3. CPT001_BH110_160119_0.0 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
4. CPT001_BH110_160119_0.5 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
5. CPT001_BH110_160119_1.0 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
6. CPT001_BH111_160119_0.0 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
7. CPT001_BH111_160119_0.5 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
8. CPT001_BH111_160119_1.0 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
9. CPT051A_BH18_160119_0.0 = IWRG621
10. CPT051A_BH18_160119_0.5 = IWRG621
11. CPT002_BH101_160119_0.5 = Chromium Suite (EA033)
12. CPT002_BH101_160119_1.5 = Chromium Suite (EA033)
13. CPT001_BH110_160119_0.5 = Chromium Suite (EA033)
14. CPT001_BH110_160119_1.5 = Chromium Suite (EA033)
15. CPT001_BH111_160119_0.5 = Chromium Suite (EA033)
16. CPT001_BH111_160119_1.5 = Chromium Suite (EA033)
17. CPT051A_BH18_160119_0.5 = Chromium Suite (EA033)
18. CPT051A_BH18_160119_1.5 = Chromium Suite (EA033)
19. QC152_160119 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
20. QC252_160119 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X) (Triplicate, please forward to Eurofins)
21. QC352_160119 = IWRG621 water equivalent, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
22. QC452_160119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
23. QC554_160119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
24. QC555_160119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
25. QC556_160119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)

Item 23 - 25 – PFAS analysis for Trip Blanks in eskies containing CPT002_BH101, CPT001_BH110 and CPT001_BH111. samples only.

At standard TAT thanks!

[REDACTED]
Senior Environmental Engineer
[REDACTED]

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

pu (Am)
18/1/19
1.55h
Julpu Patel
18/1/19 3:20pm
636619

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**
Contact name: **[REDACTED]**
Project name: **GAS IMPORT JETTY PIPELINE PROJECT (GIJPP) EES**
Project ID: **60592634**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Jan 18, 2019 3:20 PM**
Eurofins | mgt reference: **636619**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : .9 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : +61 3 8564 5000 or by e.mail: **[REDACTED]**

Results will be delivered electronically via e.mail to **[REDACTED]**

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report 636619-S
Project name GAS IMPORT JETTY PIPELINE PROJECT (GIJPP) EES
Project ID 60592634
Received Date Jan 18, 2019

Client Sample ID			QC252_160119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja14811
Date Sampled			Jan 16, 2019
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
Volatile Organics			
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Volatile Organics			
1,1-Dichloroethane	0.5	mg/kg	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5

Client Sample ID			QC252_160119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja14811
Date Sampled			Jan 16, 2019
Test/Reference	LOR	Unit	
Volatile Organics			
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	0.3
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total	0.3	mg/kg	0.5
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	89
Toluene-d8 (surr.)	1	%	99
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	0.7
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.0
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.3
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			QC252_160119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja14811
Date Sampled			Jan 16, 2019
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.5	mg/kg	0.6
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	0.6
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	0.5
Chrysene	0.5	mg/kg	0.8
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	1.7
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	0.7
Pyrene	0.5	mg/kg	1.6
Total PAH*	0.5	mg/kg	6.5
2-Fluorobiphenyl (surr.)	1	%	90
p-Terphenyl-d14 (surr.)	1	%	83
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchloroendate (surr.)	1	%	75
Tetrachloro-m-xylene (surr.)	1	%	64
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1

Client Sample ID			QC252_160119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja14811
Date Sampled			Jan 16, 2019
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls			
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchloredate (surr.)	1	%	75
Tetrachloro-m-xylene (surr.)	1	%	64
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	43
PFASs Summations			
Sum (PFHxS + PFOS)*	5	ug/kg	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10
Sum of PFASs (n=28)*	50	ug/kg	< 50
Perfluoroalkyl carboxylic acids (PFCAs) - Trace			
Perfluorobutanoic acid (PFBA) ^{N11}	5	ug/kg	< 5
Perfluoropentanoic acid (PFPeA) ^{N11}	5	ug/kg	< 5
Perfluorohexanoic acid (PFHxA) ^{N11}	5	ug/kg	< 5
Perfluoroheptanoic acid (PFHpA) ^{N11}	5	ug/kg	< 5
Perfluorooctanoic acid (PFOA) ^{N11}	5	ug/kg	< 5
Perfluorononanoic acid (PFNA) ^{N11}	5	ug/kg	< 5
Perfluorodecanoic acid (PFDA) ^{N11}	5	ug/kg	< 5
Perfluoroundecanoic acid (PFUnDA) ^{N11}	5	ug/kg	< 5
Perfluorododecanoic acid (PFDoDA) ^{N11}	5	ug/kg	< 5
Perfluorotridecanoic acid (PFTTrDA) ^{N15}	5	ug/kg	< 5
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	5	ug/kg	< 5
13C4-PFBA (surr.)	1	%	63
13C5-PFPeA (surr.)	1	%	96
13C5-PFHxA (surr.)	1	%	75

Client Sample ID			QC252_160119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja14811
Date Sampled			Jan 16, 2019
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs) - Trace			
13C4-PFHpA (surr.)	1	%	84
13C8-PFOA (surr.)	1	%	79
13C5-PFNA (surr.)	1	%	85
13C6-PFDA (surr.)	1	%	73
13C2-PFUnDA (surr.)	1	%	50
13C2-PFDoDA (surr.)	1	%	46
13C2-PFTeDA (surr.)	1	%	26
Perfluoroalkyl sulfonic acids (PFSA)s - Trace			
Perfluorobutanesulfonic acid (PFBS) ^{N11}	5	ug/kg	< 5
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	5	ug/kg	< 5
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	5	ug/kg	< 5
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	5	ug/kg	< 5
Perfluorooctanesulfonic acid (PFOS) ^{N11}	5	ug/kg	< 5
Perfluorodecanesulfonic acid (PFDS) ^{N15}	5	ug/kg	< 5
13C3-PFBS (surr.)	1	%	108
18O2-PFHxS (surr.)	1	%	92
13C8-PFOS (surr.)	1	%	103
Perfluoroalkyl sulfonamido substances- Trace			
Perfluorooctane sulfonamide (FOSA) ^{N11}	5	ug/kg	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	5	ug/kg	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	5	ug/kg	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) ^{N11}	5	ug/kg	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) ^{N11}	5	ug/kg	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	10	ug/kg	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	10	ug/kg	< 10
13C8-FOSA (surr.)	1	%	38
D3-N-MeFOSA (surr.)	1	%	INT
D5-N-EtFOSA (surr.)	1	%	INT
D7-N-MeFOSE (surr.)	1	%	INT
D9-N-EtFOSE (surr.)	1	%	INT
D5-N-EtFOSAA (surr.)	1	%	21
D3-N-MeFOSAA (surr.)	1	%	17
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)s - Trace			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	5	ug/kg	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11}	10	ug/kg	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	5	ug/kg	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N15}	5	ug/kg	< 5
13C2-4:2 FTSA (surr.)	1	%	93
13C2-6:2 FTSA (surr.)	1	%	192
13C2-8:2 FTSA (surr.)	1	%	60

Client Sample ID			QC252_160119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja14811
Date Sampled			Jan 16, 2019
Test/Reference	LOR	Unit	
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride	100	mg/kg	220
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.8
% Moisture	1	%	8.0
Heavy Metals			
Arsenic	2	mg/kg	7.8
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	36
Copper	5	mg/kg	11
Lead	5	mg/kg	12
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	24
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	170

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Jan 23, 2019	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Jan 23, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Jan 23, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Jan 23, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Jan 24, 2019	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Jan 24, 2019	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Jan 23, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Jan 23, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs) - Trace			
Perfluoroalkyl carboxylic acids (PFCAs) - Trace	Brisbane	Jan 22, 2019	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFASs)- Trace	Brisbane	Jan 22, 2019	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances- Trace	Brisbane	Jan 22, 2019	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)- Trace	Brisbane	Jan 22, 2019	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
% Moisture	Melbourne	Jan 19, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Project Name: GAS IMPORT JETTY PIPELINE PROJECT (GIJPP) EES
Project ID: 60592634

Order No.:
Report #: 636619
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Jan 18, 2019 3:20 PM
Due: Jan 25, 2019
Priority: 5 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IW/RG 621 (Solids)	Per- and Polyfluoralkyl Substances (PFASs) - Trace
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								X
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	QC252_160119	Jan 16, 2019	11:45AM	Soil	M19-Ja14811	X	X	X
Test Counts						1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPa, PFHx, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
1,2,4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1,1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1,1,1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,1,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,3,5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1,2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1,3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs) - Trace							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSA)- Trace							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances- Trace							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)- Trace							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	97			70-130	Pass	
TRH C10-C14	%	117			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	80			70-130	Pass	
1.1.1-Trichloroethane	%	91			70-130	Pass	
1.2-Dichlorobenzene	%	106			70-130	Pass	
1.2-Dichloroethane	%	99			70-130	Pass	
Benzene	%	99			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
m&p-Xylenes	%	103			70-130	Pass	
Toluene	%	101			70-130	Pass	
Trichloroethene	%	94			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Xylenes - Total	%	103			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	86			70-130	Pass	
TRH C6-C10	%	91			70-130	Pass	
TRH >C10-C16	%	121			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	110			70-130	Pass	
Acenaphthylene	%	99			70-130	Pass	
Anthracene	%	98			70-130	Pass	
Benz(a)anthracene	%	96			70-130	Pass	
Benzo(a)pyrene	%	96			70-130	Pass	
Benzo(b&j)fluoranthene	%	92			70-130	Pass	
Benzo(g,h,i)perylene	%	105			70-130	Pass	
Benzo(k)fluoranthene	%	108			70-130	Pass	
Chrysene	%	130			70-130	Pass	
Dibenz(a,h)anthracene	%	90			70-130	Pass	
Fluoranthene	%	85			70-130	Pass	
Fluorene	%	102			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	80			70-130	Pass	
Naphthalene	%	121			70-130	Pass	
Phenanthrene	%	103			70-130	Pass	
Pyrene	%	93			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	92			70-130	Pass	
4,4'-DDD	%	71			70-130	Pass	
4,4'-DDE	%	96			70-130	Pass	
4,4'-DDT	%	90			70-130	Pass	
a-BHC	%	91			70-130	Pass	
Aldrin	%	102			70-130	Pass	
b-BHC	%	76			70-130	Pass	
d-BHC	%	83			70-130	Pass	
Dieldrin	%	117			70-130	Pass	
Endosulfan I	%	92			70-130	Pass	
Endosulfan II	%	102			70-130	Pass	
Endosulfan sulphate	%	97			70-130	Pass	
Endrin	%	73			70-130	Pass	
Endrin aldehyde	%	92			70-130	Pass	
Endrin ketone	%	80			70-130	Pass	
g-BHC (Lindane)	%	106			70-130	Pass	
Heptachlor	%	77			70-130	Pass	
Heptachlor epoxide	%	97			70-130	Pass	
Hexachlorobenzene	%	110			70-130	Pass	
Methoxychlor	%	85			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	71			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	96			30-130	Pass	
2,4-Dichlorophenol	%	80			30-130	Pass	
2,4,5-Trichlorophenol	%	69			30-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2,4,6-Trichlorophenol	%	65			30-130	Pass	
2,6-Dichlorophenol	%	87			30-130	Pass	
4-Chloro-3-methylphenol	%	84			30-130	Pass	
Pentachlorophenol	%	37			30-130	Pass	
Tetrachlorophenols - Total	%	77			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	%	52			30-130	Pass	
2-Methyl-4,6-dinitrophenol	%	33			30-130	Pass	
2-Methylphenol (o-Cresol)	%	98			30-130	Pass	
2-Nitrophenol	%	81			30-130	Pass	
2,4-Dimethylphenol	%	92			30-130	Pass	
2,4-Dinitrophenol	%	44			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	103			30-130	Pass	
4-Nitrophenol	%	65			30-130	Pass	
Dinoseb	%	73			30-130	Pass	
Phenol	%	97			30-130	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs) - Trace							
Perfluorobutanoic acid (PFBA)	%	91			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	116			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	81			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	102			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	121			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	113			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	112			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	101			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	119			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	95			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	124			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSA)s- Trace							
Perfluorobutanesulfonic acid (PFBS)	%	78			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	88			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	81			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	70			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	104			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	91			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances- Trace							
Perfluorooctane sulfonamide (FOSA)	%	82			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	116			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	92			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	122			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	74			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	129			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	102			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)s- Trace							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	122			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	114			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	135			50-150	Pass	
LCS - % Recovery							

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium (hexavalent)				%	98			70-130	Pass	
Cyanide (total)				%	84			70-130	Pass	
Fluoride				%	113			70-130	Pass	
LCS - % Recovery										
Heavy Metals										
Arsenic				%	103			80-120	Pass	
Cadmium				%	90			80-120	Pass	
Chromium				%	108			80-120	Pass	
Copper				%	110			80-120	Pass	
Lead				%	112			80-120	Pass	
Mercury				%	109			75-125	Pass	
Molybdenum				%	103			80-120	Pass	
Nickel				%	107			80-120	Pass	
Selenium				%	102			80-120	Pass	
Silver				%	95			80-120	Pass	
Tin				%	107			80-120	Pass	
Zinc				%	104			80-120	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1					
TRH C6-C9	M19-Ja14032	NCP	%	80				70-130	Pass	
TRH C10-C14	M19-Ja20034	NCP	%	130				70-130	Pass	
Spike - % Recovery										
Volatile Organics					Result 1					
1.1.1-Trichloroethane	M19-Ja14032	NCP	%	88				70-130	Pass	
1.2-Dichlorobenzene	M19-Ja14032	NCP	%	99				70-130	Pass	
1.2-Dichloroethane	M19-Ja14032	NCP	%	107				70-130	Pass	
Benzene	M19-Ja14032	NCP	%	102				70-130	Pass	
Ethylbenzene	M19-Ja14032	NCP	%	80				70-130	Pass	
m&p-Xylenes	M19-Ja14032	NCP	%	85				70-130	Pass	
o-Xylene	M19-Ja14032	NCP	%	86				70-130	Pass	
Toluene	M19-Ja14032	NCP	%	111				70-130	Pass	
Trichloroethene	M19-Ja14032	NCP	%	98				70-130	Pass	
Xylenes - Total	M19-Ja14032	NCP	%	86				70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1					
Naphthalene	M19-Ja14032	NCP	%	77				70-130	Pass	
TRH C6-C10	M19-Ja14032	NCP	%	76				70-130	Pass	
TRH >C10-C16	M19-Ja20034	NCP	%	125				70-130	Pass	
Spike - % Recovery										
Polycyclic Aromatic Hydrocarbons					Result 1					
Acenaphthene	M19-Ja14884	NCP	%	100				70-130	Pass	
Acenaphthylene	M19-Ja14884	NCP	%	98				70-130	Pass	
Anthracene	M19-Ja14884	NCP	%	91				70-130	Pass	
Benz(a)anthracene	M19-Ja14884	NCP	%	94				70-130	Pass	
Benzo(a)pyrene	M19-Ja14884	NCP	%	84				70-130	Pass	
Benzo(b&j)fluoranthene	M19-Ja14884	NCP	%	115				70-130	Pass	
Benzo(g,h,i)perylene	M19-Ja14884	NCP	%	82				70-130	Pass	
Benzo(k)fluoranthene	M19-Ja14884	NCP	%	93				70-130	Pass	
Chrysene	M19-Ja14884	NCP	%	106				70-130	Pass	
Dibenz(a,h)anthracene	M19-Ja14884	NCP	%	91				70-130	Pass	
Fluoranthene	M19-Ja14884	NCP	%	110				70-130	Pass	
Fluorene	M19-Ja14884	NCP	%	95				70-130	Pass	
Indeno(1.2.3-cd)pyrene	M19-Ja14884	NCP	%	73				70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Naphthalene	M19-Ja14884	NCP	%	104			70-130	Pass	
Phenanthrene	M19-Ja14884	NCP	%	105			70-130	Pass	
Pyrene	M19-Ja14884	NCP	%	118			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M19-Ja14779	NCP	%	85			70-130	Pass	
4,4'-DDD	M19-Ja14779	NCP	%	78			70-130	Pass	
4,4'-DDE	M19-Ja14779	NCP	%	73			70-130	Pass	
4,4'-DDT	M19-Ja14779	NCP	%	73			70-130	Pass	
a-BHC	M19-Ja14779	NCP	%	96			70-130	Pass	
Aldrin	M19-Ja14779	NCP	%	85			70-130	Pass	
b-BHC	M19-Ja14779	NCP	%	78			70-130	Pass	
d-BHC	M19-Ja14779	NCP	%	89			70-130	Pass	
Dieldrin	M19-Ja14779	NCP	%	88			70-130	Pass	
Endosulfan I	M19-Ja14779	NCP	%	78			70-130	Pass	
Endosulfan II	M19-Ja14779	NCP	%	102			70-130	Pass	
Endosulfan sulphate	M19-Ja14779	NCP	%	77			70-130	Pass	
Endrin	M19-Ja14779	NCP	%	83			70-130	Pass	
Endrin aldehyde	M19-Ja14779	NCP	%	104			70-130	Pass	
Endrin ketone	M19-Ja14779	NCP	%	97			70-130	Pass	
g-BHC (Lindane)	M19-Ja14779	NCP	%	98			70-130	Pass	
Heptachlor	M19-Ja14779	NCP	%	75			70-130	Pass	
Heptachlor epoxide	M19-Ja14779	NCP	%	105			70-130	Pass	
Hexachlorobenzene	M19-Ja14779	NCP	%	106			70-130	Pass	
Methoxychlor	M19-Ja14779	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	S19-Ja06427	NCP	%	71			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M19-Ja14884	NCP	%	84			30-130	Pass	
2,4-Dichlorophenol	M19-Ja14884	NCP	%	69			30-130	Pass	
2,4,5-Trichlorophenol	M19-Ja14884	NCP	%	64			30-130	Pass	
2,4,6-Trichlorophenol	M19-Ja14884	NCP	%	65			30-130	Pass	
2,6-Dichlorophenol	M19-Ja14884	NCP	%	73			30-130	Pass	
4-Chloro-3-methylphenol	M19-Ja14884	NCP	%	74			30-130	Pass	
Pentachlorophenol	M19-Ja14884	NCP	%	107			30-130	Pass	
Tetrachlorophenols - Total	M19-Ja14884	NCP	%	93			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4,6-dinitrophenol	M19-Ja14884	NCP	%	89			30-130	Pass	
2-Methyl-4,6-dinitrophenol	M19-Ja14884	NCP	%	126			30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Ja14884	NCP	%	71			30-130	Pass	
2-Nitrophenol	M19-Ja14884	NCP	%	69			30-130	Pass	
2,4-Dimethylphenol	M19-Ja14884	NCP	%	40			30-130	Pass	
2,4-Dinitrophenol	M19-Ja14884	NCP	%	74			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Ja14884	NCP	%	80			30-130	Pass	
4-Nitrophenol	M19-Ja14884	NCP	%	117			30-130	Pass	
Dinoseb	M19-Ja14884	NCP	%	91			30-130	Pass	
Phenol	M19-Ja14884	NCP	%	84			30-130	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCA) - Trace				Result 1					
Perfluorobutanoic acid (PFBA)	B19-Ja17276	NCP	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B19-Ja17276	NCP	%	108			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorohexanoic acid (PFHxA)	B19-Ja17276	NCP	%	88			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B19-Ja17276	NCP	%	104			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B19-Ja17276	NCP	%	118			50-150	Pass	
Perfluorononanoic acid (PFNA)	B19-Ja17276	NCP	%	103			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B19-Ja17276	NCP	%	118			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B19-Ja17276	NCP	%	96			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B19-Ja17276	NCP	%	102			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B19-Ja17276	NCP	%	94			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B19-Ja17276	NCP	%	121			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSA)s- Trace				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B19-Ja17276	NCP	%	80			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B19-Ja17276	NCP	%	77			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B19-Ja17276	NCP	%	80			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B19-Ja17276	NCP	%	61			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B19-Ja17276	NCP	%	91			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B19-Ja17276	NCP	%	86			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances- Trace				Result 1					
Perfluorooctane sulfonamide (FOSA)	B19-Ja17276	NCP	%	88			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B19-Ja17276	NCP	%	123			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B19-Ja17276	NCP	%	104			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B19-Ja17276	NCP	%	107			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B19-Ja17276	NCP	%	115			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B19-Ja17276	NCP	%	123			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B19-Ja17276	NCP	%	116			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)s- Trace				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B19-Ja17276	NCP	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B19-Ja17276	NCP	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B19-Ja17276	NCP	%	132			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B19-Ja17276	NCP	%	100			50-150	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M19-Ja14681	NCP	%	119			70-130	Pass	
Cyanide (total)	M19-Ja19082	NCP	%	66			70-130	Fail	Q08
Fluoride	M19-Ja18875	NCP	%	112			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M19-Ja11972	NCP	%	84			75-125	Pass	
Cadmium	M19-Ja11972	NCP	%	100			75-125	Pass	
Chromium	M19-Ja11972	NCP	%	82			75-125	Pass	
Copper	M19-Ja11972	NCP	%	90			75-125	Pass	
Lead	M19-Ja11972	NCP	%	85			75-125	Pass	
Mercury	M19-Ja11972	NCP	%	116			70-130	Pass	
Molybdenum	M19-Ja11972	NCP	%	88			75-125	Pass	
Nickel	M19-Ja11972	NCP	%	89			75-125	Pass	
Selenium	M19-Ja11972	NCP	%	81			75-125	Pass	
Silver	M19-Ja11972	NCP	%	107			75-125	Pass	
Tin	M19-Ja11972	NCP	%	93			75-125	Pass	
Zinc	M19-Ja11972	NCP	%	89			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S19-Ja15479	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M19-Ja14264	NCP	mg/kg	22	< 20	11	30%	Pass	
TRH C15-C28	M19-Ja14264	NCP	mg/kg	610	530	14	30%	Pass	
TRH C29-C36	M19-Ja14264	NCP	mg/kg	390	380	2.0	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1,2,4-Trichlorobenzene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1,1-Dichloroethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1-Dichloroethene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,1-Trichloroethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,1,2-Tetrachloroethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,2-Trichloroethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,2,2-Tetrachloroethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2-Dibromoethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2-Dichlorobenzene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2-Dichloroethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2-Dichloropropane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2,3-Trichloropropane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2,4-Trimethylbenzene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,3-Dichlorobenzene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,3-Dichloropropane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,3,5-Trimethylbenzene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,4-Dichlorobenzene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	S19-Ja15479	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
Carbon disulfide	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon Tetrachloride	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chlorobenzene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroform	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloromethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.2-Dichloroethene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.3-Dichloropropene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromochloromethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromomethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dichlorodifluoromethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Ethylbenzene	S19-Ja15479	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Iodomethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Isopropyl benzene (Cumene)	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
m&p-Xylenes	S19-Ja15479	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methylene Chloride	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
o-Xylene	S19-Ja15479	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Styrene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Toluene	S19-Ja15479	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
trans-1.2-Dichloroethene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1.3-Dichloropropene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Xylenes - Total	S19-Ja15479	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S19-Ja15479	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S19-Ja15479	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M19-Ja14264	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	M19-Ja14264	NCP	mg/kg	850	760	11	30%	Pass
TRH >C34-C40	M19-Ja14264	NCP	mg/kg	220	290	24	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M19-Ja14850	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M19-Ja14850	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M19-Ja14850	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M19-Ja14850	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M19-Ja14850	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M19-Ja14850	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M19-Ja14850	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M19-Ja14850	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M19-Ja14850	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M19-Ja14850	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	M19-Ja14850	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M19-Ja14850	NCP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M19-Ja14850	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M19-Ja14850	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M19-Ja14850	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M19-Ja14850	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs) - Trace				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanoic acid (PFNA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass

Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs) - Trace				Result 1	Result 2	RPD		
Perfluorotridecanoic acid (PFTTrDA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFSA)s- Trace				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	B19-Ja12176	NCP	ug/kg	19	23	19	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	B19-Ja17275	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances- Trace				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B19-Ja12176	NCP	ug/kg	< 10	< 10	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B19-Ja12176	NCP	ug/kg	< 10	< 10	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)s- Trace				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B19-Ja17275	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B19-Ja17275	NCP	ug/kg	< 10	< 10	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B19-Ja12176	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M19-Ja14678	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Fluoride	M19-Ja18869	NCP	mg/kg	560	430	26	30%	Pass
% Moisture	M19-Ja17038	NCP	%	19	19	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M19-Ja11972	NCP	mg/kg	6.6	6.8	2.0	30%	Pass
Cadmium	M19-Ja11972	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M19-Ja11972	NCP	mg/kg	37	38	3.0	30%	Pass
Copper	M19-Ja11972	NCP	mg/kg	14	14	3.0	30%	Pass
Lead	M19-Ja11972	NCP	mg/kg	35	36	3.0	30%	Pass
Mercury	M19-Ja11972	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Molybdenum	M19-Ja11972	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M19-Ja11972	NCP	mg/kg	19	19	4.0	30%	Pass
Selenium	M19-Ja11972	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M19-Ja11972	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tin	M19-Ja11972	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M19-Ja11972	NCP	mg/kg	29	29	2.0	30%	Pass

Comments





Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (QLD)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)






Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Please freeze bags for Add sulfate analysis

COC Page of

828929

From: [REDACTED]
Sent: Friday, 18 January 2019 2:39 PM
To: [REDACTED]
Subject: RE: 60592634

Hi [REDACTED]

Please analyse:

1. CPT067_BH24_170119_0.2 = IWRG621
2. CPT067_BH24_170119_0.5 = IWRG621
3. CPT073_BH27_170119_0.2 = IWRG621
4. CPT073_BH27_170119_0.5 = IWRG621
5. CPT104_BH38_170119_0.2 = IWRG621
6. CPT104_BH38_170119_0.5 = IWRG621
7. CPT123_BH46_170119_0.2 = IWRG621
8. CPT123_BH46_170119_0.5 = IWRG621
9. CPT067_BH24_170119_0.5 = SPOCAS (EA029)
10. CPT067_BH24_170119_2.0 = SPOCAS (EA029)
11. CPT073_BH27_170119_0.5 = Chromium Suite (EA033)
12. CPT073_BH27_170119_1.5 = Chromium Suite (EA033)
13. CPT104_BH38_170119_0.5 = Chromium Suite (EA033)
14. CPT104_BH38_170119_1.5 = Chromium Suite (EA033)
15. CPT123_BH46_170119_0.5 = Chromium Suite (EA033)
16. CPT123_BH46_170119_1.5 = Chromium Suite (EA033)
17. QC104_170119 = IWRG621
18. QC204_170119 = IWRG621 (Triplicate, please forward to Eurofins)
19. QC314_170119 = IWRG621 water equivalent
20. QC414_170119 = TPH(C6-C9)/BTEXN
21. QC525_170119 = TPH(C6-C9)/BTEXN
22. QC526_170119 = TPH(C6-C9)/BTEXN
23. QC527_170119 = TPH(C6-C9)/BTEXN

At Standard TAT. Thanks!

[REDACTED]
Senior Environmental Engineer
[REDACTED]
[REDACTED]

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
<http://www.aecom.com>

Built to deliver a better world

-----Original Message-----

From: [REDACTED]@alsglobal.com]
Sent: Friday, 18 January 2019 7:05 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: 60592634

Hi [REDACTED]

Please find attached samples on hold

Thanks

Regards

Religious G -
Rn (Hw)
21/1/19 C
1-2/19

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**
Contact name: [REDACTED]
Project name: **GIJPP GROUNDWATER STUDY**
Project ID: **60592634**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Jan 21, 2019 2:45 PM**
Eurofins | mgt reference: **636828**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 3.9 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : +61 3 8564 5000 or by e.mail: [REDACTED]

Results will be delivered electronically via e.mail to [REDACTED]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report 636828-S
Project name GIJPP GROUNDWATER STUDY
Project ID 60592634
Received Date Jan 21, 2019

Client Sample ID			CPT_QC204_1 70119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja16409
Date Sampled			Jan 17, 2019
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
Volatile Organics			
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Volatile Organics			
1,1-Dichloroethane	0.5	mg/kg	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5

Client Sample ID			CPT_QC204_1
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja16409
Date Sampled			Jan 17, 2019
Test/Reference	LOR	Unit	
Volatile Organics			
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	105
Toluene-d8 (surr.)	1	%	97
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			CPT_QC204_1
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja16409
Date Sampled			Jan 17, 2019
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	76
p-Terphenyl-d14 (surr.)	1	%	75
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchloroendate (surr.)	1	%	88
Tetrachloro-m-xylene (surr.)	1	%	100
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1

Client Sample ID			CPT_QC204_1
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja16409
Date Sampled			Jan 17, 2019
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls			
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchloredate (surr.)	1	%	88
Tetrachloro-m-xylene (surr.)	1	%	100
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	89
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride	100	mg/kg	270
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.9
% Moisture	1	%	29
Heavy Metals			
Arsenic	2	mg/kg	2.2
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	46
Copper	5	mg/kg	34
Lead	5	mg/kg	25
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	17
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	9.3

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 25, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Jan 25, 2019	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Jan 25, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 25, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 25, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 25, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Jan 25, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Jan 25, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Jan 25, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Jan 25, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Jan 29, 2019	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Jan 30, 2019	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Jan 26, 2019	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Jan 25, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Jan 25, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Jan 22, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008
Project Name: GIJPP GROUNDWATER STUDY
Project ID: 60592634

Order No.:
Report #: 636828
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Jan 21, 2019 2:45 PM
Due: Jan 29, 2019
Priority: 5 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IW/RG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	CPT_QC204_170119	Jan 17, 2019		Soil	M19-Ja16409	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
Method Blank							
Volatile Organics							
1.2.4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene				mg/kg	< 0.1			0.1	Pass	
Styrene				mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene				mg/kg	< 0.5			0.5	Pass	
Toluene				mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene				mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene				mg/kg	< 0.5			0.5	Pass	
Trichloroethene				mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane				mg/kg	< 0.5			0.5	Pass	
Vinyl chloride				mg/kg	< 0.5			0.5	Pass	
Xylenes - Total				mg/kg	< 0.3			0.3	Pass	
Method Blank										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions										
Naphthalene				mg/kg	< 0.5			0.5	Pass	
TRH C6-C10				mg/kg	< 20			20	Pass	
LCS - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions										
TRH C6-C9				%	115			70-130	Pass	
LCS - % Recovery										
Volatile Organics										
1.1.1-Trichloroethane				%	82			70-130	Pass	
1.2-Dichlorobenzene				%	104			70-130	Pass	
1.2-Dichloroethane				%	106			70-130	Pass	
Benzene				%	89			70-130	Pass	
Ethylbenzene				%	107			70-130	Pass	
m&p-Xylenes				%	105			70-130	Pass	
Toluene				%	109			70-130	Pass	
Trichloroethene				%	95			70-130	Pass	
Xylenes - Total				%	104			70-130	Pass	
LCS - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions										
TRH C6-C10				%	113			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1					
TRH C6-C9	M19-Ja24272	NCP	%	121				70-130	Pass	
TRH C10-C14	M19-Ja22270	NCP	%	126				70-130	Pass	
Spike - % Recovery										
Volatile Organics					Result 1					
1.1-Dichloroethene	M19-Ja24272	NCP	%	105				70-130	Pass	
1.1.1-Trichloroethane	M19-Ja24272	NCP	%	102				70-130	Pass	
1.2-Dichlorobenzene	M19-Ja24272	NCP	%	110				70-130	Pass	
1.2-Dichloroethane	M19-Ja24272	NCP	%	98				70-130	Pass	
Benzene	M19-Ja24272	NCP	%	112				70-130	Pass	
Ethylbenzene	M19-Ja24272	NCP	%	124				70-130	Pass	
m&p-Xylenes	M19-Ja24272	NCP	%	117				70-130	Pass	
o-Xylene	M19-Ja24272	NCP	%	115				70-130	Pass	
Toluene	M19-Ja24272	NCP	%	125				70-130	Pass	
Trichloroethene	M19-Ja24272	NCP	%	105				70-130	Pass	
Xylenes - Total	M19-Ja24272	NCP	%	116				70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1					
Naphthalene	M19-Ja24272	NCP	%	79				70-130	Pass	
TRH C6-C10	M19-Ja24272	NCP	%	126				70-130	Pass	
TRH >C10-C16	M19-Ja22270	NCP	%	128				70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M19-Ja14703	NCP	%	91			70-130	Pass	
Acenaphthylene	M19-Ja14703	NCP	%	94			70-130	Pass	
Anthracene	M19-Ja14703	NCP	%	92			70-130	Pass	
Benz(a)anthracene	M19-Ja14703	NCP	%	84			70-130	Pass	
Benzo(a)pyrene	M19-Ja14703	NCP	%	81			70-130	Pass	
Benzo(b&j)fluoranthene	M19-Ja14703	NCP	%	71			70-130	Pass	
Benzo(g,h,i)perylene	M19-Ja14703	NCP	%	74			70-130	Pass	
Benzo(k)fluoranthene	M19-Ja14703	NCP	%	73			70-130	Pass	
Chrysene	M19-Ja14703	NCP	%	82			70-130	Pass	
Dibenz(a,h)anthracene	M19-Ja14703	NCP	%	94			70-130	Pass	
Fluoranthene	M19-Ja14703	NCP	%	113			70-130	Pass	
Fluorene	M19-Ja14703	NCP	%	106			70-130	Pass	
Indeno(1,2,3-cd)pyrene	M19-Ja14703	NCP	%	113			70-130	Pass	
Naphthalene	M19-Ja14703	NCP	%	91			70-130	Pass	
Phenanthrene	M19-Ja14703	NCP	%	114			70-130	Pass	
Pyrene	M19-Ja14703	NCP	%	119			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S19-Ja17731	NCP	%	122			70-130	Pass	
4,4'-DDD	S19-Ja17731	NCP	%	76			70-130	Pass	
4,4'-DDE	S19-Ja17731	NCP	%	108			70-130	Pass	
4,4'-DDT	S19-Ja17731	NCP	%	82			70-130	Pass	
a-BHC	S19-Ja17731	NCP	%	106			70-130	Pass	
Aldrin	S19-Ja17731	NCP	%	107			70-130	Pass	
b-BHC	S19-Ja17731	NCP	%	93			70-130	Pass	
d-BHC	S19-Ja17731	NCP	%	105			70-130	Pass	
Dieldrin	S19-Ja17731	NCP	%	122			70-130	Pass	
Endosulfan I	S19-Ja17731	NCP	%	119			70-130	Pass	
Endosulfan II	S19-Ja17731	NCP	%	103			70-130	Pass	
Endosulfan sulphate	S19-Ja17731	NCP	%	73			70-130	Pass	
Endrin	S19-Ja17731	NCP	%	76			70-130	Pass	
Endrin aldehyde	S19-Ja17731	NCP	%	82			70-130	Pass	
Endrin ketone	S19-Ja17731	NCP	%	80			70-130	Pass	
g-BHC (Lindane)	S19-Ja17731	NCP	%	112			70-130	Pass	
Heptachlor	S19-Ja17731	NCP	%	79			70-130	Pass	
Heptachlor epoxide	S19-Ja17731	NCP	%	99			70-130	Pass	
Hexachlorobenzene	S19-Ja17731	NCP	%	121			70-130	Pass	
Methoxychlor	S19-Ja17731	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	M19-Ja14458	NCP	%	111			70-130	Pass	
Aroclor-1260	M19-Ja14458	NCP	%	121			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M19-Ja14703	NCP	%	85			30-130	Pass	
2,4-Dichlorophenol	M19-Ja14703	NCP	%	83			30-130	Pass	
2,4,5-Trichlorophenol	M19-Ja14703	NCP	%	89			30-130	Pass	
2,4,6-Trichlorophenol	M19-Ja14703	NCP	%	97			30-130	Pass	
2,6-Dichlorophenol	M19-Ja14703	NCP	%	87			30-130	Pass	
4-Chloro-3-methylphenol	M19-Ja14703	NCP	%	89			30-130	Pass	
Pentachlorophenol	M19-Ja14703	NCP	%	80			30-130	Pass	
Tetrachlorophenols - Total	M19-Ja14703	NCP	%	81			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M19-Ja14703	NCP	%	110			30-130	Pass	
2-Methyl-4.6-dinitrophenol	M19-Ja14703	NCP	%	95			30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Ja14703	NCP	%	78			30-130	Pass	
2-Nitrophenol	M19-Ja14703	NCP	%	96			30-130	Pass	
2.4-Dimethylphenol	M19-Ja13424	NCP	%	95			30-130	Pass	
2.4-Dinitrophenol	M19-Ja14703	NCP	%	82			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Ja14703	NCP	%	93			30-130	Pass	
4-Nitrophenol	M19-Ja14703	NCP	%	108			30-130	Pass	
Dinoseb	M19-Ja14703	NCP	%	101			30-130	Pass	
Phenol	M19-Ja14703	NCP	%	90			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	P19-Ja21040	NCP	%	121			70-130	Pass	
Fluoride	M19-Ja16292	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M19-Ja16295	NCP	%	123			75-125	Pass	
Cadmium	M19-Ja16295	NCP	%	91			75-125	Pass	
Chromium	M19-Ja16295	NCP	%	112			75-125	Pass	
Lead	M19-Ja22310	NCP	%	120			75-125	Pass	
Mercury	M19-Ja16295	NCP	%	92			70-130	Pass	
Molybdenum	M19-Ja16295	NCP	%	101			75-125	Pass	
Nickel	M19-Ja16295	NCP	%	97			75-125	Pass	
Selenium	M19-Ja16295	NCP	%	102			75-125	Pass	
Silver	M19-Ja16295	NCP	%	97			75-125	Pass	
Tin	M19-Ja16295	NCP	%	86			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M19-Ja24271	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M19-Ja22269	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M19-Ja22269	NCP	mg/kg	120	160	28	30%	Pass	
TRH C29-C36	M19-Ja22269	NCP	mg/kg	98	140	38	30%	Fail	Q15
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C10	M19-Ja24271	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M19-Ja22269	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M19-Ja22544	NCP	mg/kg	1.0	1.3	23	30%	Pass	
Indeno(1.2.3-cd)pyrene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Naphthalene	M19-Ja22544	NCP	mg/kg	2.1	2.2	3.0	30%	Pass
Phenanthrene	M19-Ja22544	NCP	mg/kg	1.1	1.3	21	30%	Pass
Pyrene	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M19-Ja22544	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M19-Ja22544	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M19-Ja22544	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M19-Ja22544	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M19-Ja22544	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M19-Ja22544	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M19-Ja22544	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M19-Ja22544	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M19-Ja22544	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M19-Ja22544	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	M19-Ja22544	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M19-Ja22544	NCP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M19-Ja22544	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M19-Ja22544	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M19-Ja22544	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M19-Ja22544	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	P19-Ja21039	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Fluoride	M19-Ja16460	NCP	mg/kg	< 100	< 100	<1	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	M19-Ja16460	NCP	pH Units	7.7	7.6	pass	30%	Pass
% Moisture	M19-Ja16471	NCP	%	11	13	13	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M19-Ja16295	NCP	mg/kg	15	15	3.0	30%	Pass
Cadmium	M19-Ja16295	NCP	mg/kg	2.0	2.2	7.0	30%	Pass
Chromium	M19-Ja16295	NCP	mg/kg	27	28	6.0	30%	Pass
Copper	M19-Ja16295	NCP	mg/kg	450	470	4.0	30%	Pass
Lead	M19-Ja22309	NCP	mg/kg	13	14	4.0	30%	Pass
Mercury	M19-Ja16295	NCP	mg/kg	0.7	0.8	4.0	30%	Pass
Molybdenum	M19-Ja16295	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M19-Ja16295	NCP	mg/kg	53	56	5.0	30%	Pass
Selenium	M19-Ja16295	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M19-Ja16295	NCP	mg/kg	0.5	0.6	<1	30%	Pass
Tin	M19-Ja16295	NCP	mg/kg	110	110	4.0	30%	Pass
Zinc	M19-Ja16295	NCP	mg/kg	2900	2900	2.0	30%	Pass

Comments






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)




General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

ANZ
FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

AECOM

9

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLE: 60592634		MOBILE: 60592634		PHONE: 60592634		Destination Laboratory																																																																																																	
PROJECT MANAGER (PM): [Redacted]		SITE: Gas Import Entry Pipeline Project (GUPP) ESS		P.O. NO.:		EMAIL REPORT TO: [Redacted]		ANALYSIS REQUIRED including SITES (note - suite codes must be listed to attract suite prices)		ALS																																																																																																	
RESULTS REQUIRED (date):		QUOTE NO.:		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		ANALYSIS REQUIRED including SITES (note - suite codes must be listed to attract suite prices)		Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or Trace LORs etc.																																																																																																			
<p>FOR LABORATORY USE ONLY</p> <p>COOLER SEAL (circle appropriate): Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/></p> <p>SAMPLE TEMPERATURE: [Redacted]</p> <p>CHILLED: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>																																																																																																											
<p>SAMPLE INFORMATION (note S = Soil, W=Water)</p> <table border="1"> <thead> <tr> <th>ALS ID</th> <th>SAMPLE ID</th> <th>MATRIX</th> <th>DATE</th> <th>Time</th> <th>Type / Code</th> <th>Total bottles</th> <th>HOLD</th> </tr> </thead> <tbody> <tr> <td>19</td> <td>QC153-170119</td> <td>S</td> <td>17/01/19</td> <td></td> <td>1x JAR, 1x SS</td> <td>2</td> <td></td> </tr> <tr> <td>20</td> <td>QC253-170119</td> <td>S</td> <td>17/01/19</td> <td></td> <td>1x JAR, 1x SS</td> <td>2</td> <td></td> </tr> <tr> <td>21</td> <td>QC353-170119</td> <td>W</td> <td>17/01/19</td> <td>15:30</td> <td>2x Purples</td> <td>2</td> <td></td> </tr> <tr> <td>22</td> <td>QC557-170119</td> <td>W</td> <td>17/01/19</td> <td></td> <td>1x Purple</td> <td>1</td> <td></td> </tr> <tr> <td>23</td> <td>QC558-170119</td> <td>W</td> <td>17/01/19</td> <td></td> <td>1x Purple</td> <td>1</td> <td></td> </tr> <tr> <td>24</td> <td>CP126-BH47-205</td> <td></td> <td>17/01/19</td> <td>13:50</td> <td>1x JAR, 1x SS</td> <td>2</td> <td></td> </tr> <tr> <td>25</td> <td>CP126-BH47-205</td> <td></td> <td>17/01/19</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>26</td> <td>CP126-BH47-1.0</td> <td></td> <td>17/01/19</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>27</td> <td>CP126-BH47-1.5</td> <td></td> <td>17/01/19</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>28</td> <td>CP126-BH47-2.0</td> <td></td> <td>17/01/19</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>29</td> <td>CP126-BH47-2.5</td> <td></td> <td>17/01/19</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>												ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD	19	QC153-170119	S	17/01/19		1x JAR, 1x SS	2		20	QC253-170119	S	17/01/19		1x JAR, 1x SS	2		21	QC353-170119	W	17/01/19	15:30	2x Purples	2		22	QC557-170119	W	17/01/19		1x Purple	1		23	QC558-170119	W	17/01/19		1x Purple	1		24	CP126-BH47-205		17/01/19	13:50	1x JAR, 1x SS	2		25	CP126-BH47-205		17/01/19					26	CP126-BH47-1.0		17/01/19					27	CP126-BH47-1.5		17/01/19					28	CP126-BH47-2.0		17/01/19					29	CP126-BH47-2.5		17/01/19				
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29	CP126-BH47-2.5		17/01/19																																																																																																								
RELINQUISHED BY:				RECEIVED BY:				METHOD OF SHIPMENT																																																																																																			
Name: Bob		Date: 17/01/19		Name: Alice		Date: 17/01/19		Name: [Redacted]		Date: 21/11																																																																																																	
Of: AECOM		Time: 3:45pm		Of: ALS		Time: 17:20		Of: [Redacted]		Time: 2:45																																																																																																	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulfate Solids; B = Unpreserved Bag; Soil Container Codes: Jar = Unpreserved glass jar

Relinquished by -
AECOM
21/11/19
60592634

Peter Ravlic

From: [REDACTED]
Sent: Friday, 18 January 2019 1:28 PM
To: [REDACTED]
Subject: RE: 60592634

Hi [REDACTED]

Please analyse:

1. CPT094_BH35_170119_0.0 = IWRG621
2. CPT094_BH35_170119_0.5 = IWRG621
3. CPT098_BH36_170119_0.0 = IWRG621
4. CPT098_BH36_170119_0.5 = IWRG621
5. CPT117_BH44_170119_0.0 = IWRG621
6. CPT117_BH44_170119_0.5 = IWRG621
7. CPT126_BH47_170119_0.0 = IWRG621
8. CPT126_BH47_170119_0.5 = IWRG621
9. CPT094_BH35_170119_0.5 = Chromium Suite (EA033)
10. CPT094_BH35_170119_1.0 = Chromium Suite (EA033)
11. CPT098_BH36_170119_0.5 = Chromium Suite (EA033)
12. CPT098_BH36_170119_1.5 = Chromium Suite (EA033)
13. CPT117_BH44_170119_0.5 = Chromium Suite (EA033)
14. CPT117_BH44_170119_2.0 = Chromium Suite (EA033)
15. CPT126_BH47_170119_0.5 = Chromium Suite (EA033)
16. CPT126_BH47_170119_1.5 = Chromium Suite (EA033)
17. QC153_160119 = IWRG621
18. QC253_160119 = IWRG621 (Triplicate, please forward to Eurofins)
19. QC353_160119 = IWRG621 water equivalent
20. QC453_160119 = TPH(C6-C9)/BTEXN
21. QC557_160119 = TPH(C6-C9)/BTEXN
22. QC558_160119 = TPH(C6-C9)/BTEXN

At standard TAT thanks!

[REDACTED]
Senior Environmental Engineer
[REDACTED]
[REDACTED]

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
<http://www.aecom.com>

Built to deliver a better world

-----Original Message-----

From: [REDACTED]@alsglobal.com]
Sent: Friday, 18 January 2019 7:04 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: 60592634

Hi [REDACTED]

Please find attached samples on hold

Thanks

Relaymail to -
R 1 17
21/11/19 C
J. W. M.

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**
Contact name: [REDACTED]
Project name: **GAS IMPORT JETTY PIPELINE PROJECT (GIJPP) EES**
Project ID: **60592634**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Jan 21, 2019 2:45 PM**
Eurofins | mgt reference: **636831**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 3.9 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : +61 3 8564 5000 or by e.mail: [REDACTED]

Results will be delivered electronically via e.mail to [REDACTED]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report 636831-S
Project name GAS IMPORT JETTY PIPELINE PROJECT (GIJPP) EES
Project ID 60592634
Received Date Jan 21, 2019

Client Sample ID			QC253_170119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja16422
Date Sampled			Jan 17, 2019
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
Volatile Organics			
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Volatile Organics			
1,1-Dichloroethane	0.5	mg/kg	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5

Client Sample ID			QC253_170119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja16422
Date Sampled			Jan 17, 2019
Test/Reference	LOR	Unit	
Volatile Organics			
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	112
Toluene-d8 (surr.)	1	%	105
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			QC253_170119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja16422
Date Sampled			Jan 17, 2019
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	55
p-Terphenyl-d14 (surr.)	1	%	91
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchloroendate (surr.)	1	%	118
Tetrachloro-m-xylene (surr.)	1	%	63
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1

Client Sample ID			QC253_170119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja16422
Date Sampled			Jan 17, 2019
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls			
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchloredate (surr.)	1	%	118
Tetrachloro-m-xylene (surr.)	1	%	63
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	115
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride	100	mg/kg	130
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.9
% Moisture	1	%	17
Heavy Metals			
Arsenic	2	mg/kg	< 2
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	31
Copper	5	mg/kg	14
Lead	5	mg/kg	18
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	7.8
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	< 5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Jan 23, 2019	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Jan 23, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Jan 23, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Jan 23, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Jan 24, 2019	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Jan 25, 2019	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Jan 23, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Jan 23, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Jan 22, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Project Name: GAS IMPORT JETTY PIPELINE PROJECT (GIJPP) EES
Project ID: 60592634

Order No.: 60592634
Report #: 636831
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Jan 21, 2019 2:45 PM
Due: Jan 29, 2019
Priority: 5 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	QC253_170119	Jan 17, 2019		Soil	M19-Ja16422	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
1,2,4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1,1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1,1,1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,1,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,3,5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1,2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1,3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	115			70-130	Pass	
TRH C10-C14	%	127			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	77			70-130	Pass	
1.1.1-Trichloroethane	%	82			70-130	Pass	
1.2-Dichlorobenzene	%	104			70-130	Pass	
1.2-Dichloroethane	%	106			70-130	Pass	
Benzene	%	89			70-130	Pass	
Ethylbenzene	%	107			70-130	Pass	
m&p-Xylenes	%	105			70-130	Pass	
Toluene	%	109			70-130	Pass	
Trichloroethene	%	95			70-130	Pass	
Xylenes - Total	%	104			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	95			70-130	Pass	
TRH C6-C10	%	113			70-130	Pass	
TRH >C10-C16	%	117			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	86			70-130	Pass	
Acenaphthylene	%	80			70-130	Pass	
Anthracene	%	74			70-130	Pass	
Benz(a)anthracene	%	72			70-130	Pass	
Benzo(a)pyrene	%	94			70-130	Pass	
Benzo(b&j)fluoranthene	%	105			70-130	Pass	
Benzo(g,h,i)perylene	%	120			70-130	Pass	
Benzo(k)fluoranthene	%	126			70-130	Pass	
Chrysene	%	92			70-130	Pass	
Dibenz(a,h)anthracene	%	109			70-130	Pass	
Fluoranthene	%	74			70-130	Pass	
Fluorene	%	81			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	101			70-130	Pass	
Naphthalene	%	87			70-130	Pass	
Phenanthrene	%	78			70-130	Pass	
Pyrene	%	74			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	90			70-130	Pass	
4.4'-DDD	%	71			70-130	Pass	
4.4'-DDE	%	88			70-130	Pass	
4.4'-DDT	%	89			70-130	Pass	
a-BHC	%	104			70-130	Pass	
Aldrin	%	97			70-130	Pass	
b-BHC	%	98			70-130	Pass	
d-BHC	%	107			70-130	Pass	
Dieldrin	%	113			70-130	Pass	
Endosulfan I	%	111			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II			%	102			70-130	Pass	
Endosulfan sulphate			%	78			70-130	Pass	
Endrin			%	72			70-130	Pass	
Endrin aldehyde			%	83			70-130	Pass	
Endrin ketone			%	85			70-130	Pass	
g-BHC (Lindane)			%	115			70-130	Pass	
Heptachlor epoxide			%	85			70-130	Pass	
Hexachlorobenzene			%	115			70-130	Pass	
Methoxychlor			%	78			70-130	Pass	
LCS - % Recovery									
Phenols (Halogenated)									
2-Chlorophenol	%	73				30-130	Pass		
2,4-Dichlorophenol	%	68				30-130	Pass		
2,4,5-Trichlorophenol	%	53				30-130	Pass		
2,4,6-Trichlorophenol	%	98				30-130	Pass		
2,6-Dichlorophenol	%	80				30-130	Pass		
4-Chloro-3-methylphenol	%	61				30-130	Pass		
Pentachlorophenol	%	36				30-130	Pass		
Tetrachlorophenols - Total	%	45				30-130	Pass		
LCS - % Recovery									
Phenols (non-Halogenated)									
2-Methyl-4,6-dinitrophenol	%	61				30-130	Pass		
2-Methylphenol (o-Cresol)	%	68				30-130	Pass		
2-Nitrophenol	%	85				30-130	Pass		
2,4-Dimethylphenol	%	62				30-130	Pass		
3&4-Methylphenol (m&p-Cresol)	%	68				30-130	Pass		
4-Nitrophenol	%	50				30-130	Pass		
Phenol	%	69				30-130	Pass		
LCS - % Recovery									
Chromium (hexavalent)	%	110				70-130	Pass		
Cyanide (total)	%	84				70-130	Pass		
Fluoride	%	105				70-130	Pass		
LCS - % Recovery									
Heavy Metals									
Arsenic	%	113				80-120	Pass		
Cadmium	%	112				80-120	Pass		
Chromium	%	116				80-120	Pass		
Copper	%	114				80-120	Pass		
Lead	%	115				80-120	Pass		
Mercury	%	100				75-125	Pass		
Molybdenum	%	115				80-120	Pass		
Nickel	%	111				80-120	Pass		
Selenium	%	118				80-120	Pass		
Silver	%	115				80-120	Pass		
Tin	%	119				80-120	Pass		
Zinc	%	112				80-120	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M19-Ja24272	NCP	%	121			70-130	Pass	
TRH C10-C14	M19-Ja14286	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1,1-Dichloroethene	M19-Ja24272	NCP	%	105			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.1.1-Trichloroethane	M19-Ja24272	NCP	%	102			70-130	Pass	
1.2-Dichlorobenzene	M19-Ja24272	NCP	%	110			70-130	Pass	
1.2-Dichloroethane	M19-Ja24272	NCP	%	98			70-130	Pass	
Benzene	M19-Ja24272	NCP	%	112			70-130	Pass	
Ethylbenzene	M19-Ja24272	NCP	%	124			70-130	Pass	
m&p-Xylenes	M19-Ja24272	NCP	%	117			70-130	Pass	
o-Xylene	M19-Ja24272	NCP	%	115			70-130	Pass	
Toluene	M19-Ja24272	NCP	%	125			70-130	Pass	
Trichloroethene	M19-Ja24272	NCP	%	105			70-130	Pass	
Xylenes - Total	M19-Ja24272	NCP	%	116			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M19-Ja24272	NCP	%	79			70-130	Pass	
TRH C6-C10	M19-Ja24272	NCP	%	126			70-130	Pass	
TRH >C10-C16	M19-Ja14286	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M19-Ja16099	NCP	%	101			70-130	Pass	
Acenaphthylene	M19-Ja16099	NCP	%	97			70-130	Pass	
Anthracene	M19-Ja16099	NCP	%	89			70-130	Pass	
Benz(a)anthracene	M19-Ja16099	NCP	%	100			70-130	Pass	
Benzo(a)pyrene	M19-Ja16099	NCP	%	106			70-130	Pass	
Benzo(b&j)fluoranthene	M19-Ja16099	NCP	%	130			70-130	Pass	
Benzo(g,h,i)perylene	M19-Ja16099	NCP	%	118			70-130	Pass	
Benzo(k)fluoranthene	M19-Ja16099	NCP	%	117			70-130	Pass	
Chrysene	M19-Ja16099	NCP	%	111			70-130	Pass	
Dibenz(a,h)anthracene	M19-Ja16099	NCP	%	81			70-130	Pass	
Fluoranthene	M19-Ja16099	NCP	%	91			70-130	Pass	
Fluorene	M19-Ja16099	NCP	%	98			70-130	Pass	
Indeno(1,2,3-cd)pyrene	M19-Ja16099	NCP	%	84			70-130	Pass	
Naphthalene	M19-Ja16099	NCP	%	98			70-130	Pass	
Phenanthrene	M19-Ja16099	NCP	%	92			70-130	Pass	
Pyrene	M19-Ja16099	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S19-Ja15481	NCP	%	97			70-130	Pass	
4,4'-DDE	S19-Ja15481	NCP	%	104			70-130	Pass	
a-BHC	S19-Ja15481	NCP	%	102			70-130	Pass	
Aldrin	S19-Ja15481	NCP	%	105			70-130	Pass	
b-BHC	S19-Ja15481	NCP	%	97			70-130	Pass	
d-BHC	S19-Ja15481	NCP	%	102			70-130	Pass	
Dieldrin	S19-Ja15481	NCP	%	110			70-130	Pass	
Endosulfan I	S19-Ja15481	NCP	%	102			70-130	Pass	
Endosulfan II	S19-Ja15481	NCP	%	97			70-130	Pass	
Endosulfan sulphate	S19-Ja15481	NCP	%	73			70-130	Pass	
Endrin aldehyde	S19-Ja15481	NCP	%	81			70-130	Pass	
Endrin ketone	S19-Ja15481	NCP	%	98			70-130	Pass	
g-BHC (Lindane)	S19-Ja15481	NCP	%	113			70-130	Pass	
Heptachlor epoxide	S19-Ja15481	NCP	%	91			70-130	Pass	
Hexachlorobenzene	S19-Ja15481	NCP	%	118			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M19-Ja16099	NCP	%	95			30-130	Pass	
2,4-Dichlorophenol	M19-Ja16099	NCP	%	85			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2,4,5-Trichlorophenol	M19-Ja16099	NCP	%	62			30-130	Pass	
2,4,6-Trichlorophenol	M19-Ja16099	NCP	%	65			30-130	Pass	
2,6-Dichlorophenol	M19-Ja16099	NCP	%	96			30-130	Pass	
4-Chloro-3-methylphenol	M19-Ja16099	NCP	%	73			30-130	Pass	
Tetrachlorophenols - Total	M19-Ja16099	NCP	%	62			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Methylphenol (o-Cresol)	M19-Ja16099	NCP	%	84			30-130	Pass	
2-Nitrophenol	M19-Ja16099	NCP	%	110			30-130	Pass	
2,4-Dimethylphenol	M19-Ja16099	NCP	%	74			30-130	Pass	
2,4-Dinitrophenol	M19-Ja16099	NCP	%	85			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Ja16099	NCP	%	87			30-130	Pass	
Phenol	M19-Ja16099	NCP	%	91			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M19-Ja12798	NCP	%	104			70-130	Pass	
Cyanide (total)	M19-Ja19082	NCP	%	66			70-130	Fail	Q08
Fluoride	M19-Ja14688	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M19-Ja16098	NCP	%	112			75-125	Pass	
Cadmium	M19-Ja16098	NCP	%	113			75-125	Pass	
Chromium	M19-Ja16098	NCP	%	110			75-125	Pass	
Copper	M19-Ja16098	NCP	%	109			75-125	Pass	
Lead	M19-Ja16098	NCP	%	108			75-125	Pass	
Mercury	M19-Ja16098	NCP	%	103			70-130	Pass	
Molybdenum	M19-Ja16098	NCP	%	117			75-125	Pass	
Nickel	M19-Ja16098	NCP	%	104			75-125	Pass	
Selenium	M19-Ja16098	NCP	%	116			75-125	Pass	
Silver	M19-Ja16098	NCP	%	114			75-125	Pass	
Tin	M19-Ja16098	NCP	%	125			75-125	Pass	
Zinc	M19-Ja16098	NCP	%	112			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M19-Ja24271	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M19-Ja18869	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M19-Ja18869	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M19-Ja18869	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C10	M19-Ja24271	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M19-Ja18869	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M19-Ja18869	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M19-Ja18869	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Benzo(k)fluoranthene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M19-Ja16098	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M19-Ja16098	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M19-Ja16098	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M19-Ja16098	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M19-Ja16098	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M19-Ja16098	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M19-Ja16098	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M19-Ja16098	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M19-Ja16098	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M19-Ja16098	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	M19-Ja16098	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M19-Ja16098	NCP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M19-Ja16098	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M19-Ja16098	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M19-Ja16098	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M19-Ja16098	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M19-Ja14678	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Fluoride	M19-Ja16422	CP	mg/kg	130	160	16	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	M19-Ja16460	NCP	pH Units	7.7	7.6	pass	30%	Pass
% Moisture	M19-Ja17038	NCP	%	19	19	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M19-Ja16098	NCP	mg/kg	5.0	5.2	4.0	30%	Pass
Cadmium	M19-Ja16098	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M19-Ja16098	NCP	mg/kg	32	33	5.0	30%	Pass
Copper	M19-Ja16098	NCP	mg/kg	21	22	4.0	30%	Pass
Lead	M19-Ja16098	NCP	mg/kg	15	15	6.0	30%	Pass
Mercury	M19-Ja16098	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M19-Ja16098	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M19-Ja16098	NCP	mg/kg	21	22	3.0	30%	Pass
Selenium	M19-Ja16098	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M19-Ja16098	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tin	M19-Ja16098	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M19-Ja16098	NCP	mg/kg	51	53	4.0	30%	Pass

Comments






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)



General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CONSULTANT: AECOM		ADDRESS / OFFICE: SITE: Gas Import Jetty Pipeline Project (GUPT) EES P.O. NO.: 60592634		SAMPLER: PORTY MOBILE: [REDACTED] PHONE: [REDACTED] EMAIL REPORT TO: [REDACTED]		Destination Laboratory ALS																									
PROJECT MANAGER (PM): [REDACTED]		PROJECT NUMBER & TASK CODE: 00560044		ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)		Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.																									
RESULTS REQUIRED (Date):		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		QUOTE NO.:																											
FOR LABORATORY USE ONLY																															
COOLER SEAL: (circle appropriate) Intact: Yes No N/A																															
SAMPLE TEMPERATURE CHILLED: Yes No																															
SAMPLE INFORMATION (note: S = Soil, W = Water)																															
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles																									
	QC154-180117	S	18/1/17	9:45 AM	DATA R.A.S. 2.	2																									
	QC254-180119	S		16:55 AM		2																									
	QC354-180119	S		11:30 AM		9																									
	QC454-180119	W		11:30	2x purple bags	2																									
	QC559-180119	W				1																									
	QC560-180119	W				1																									
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2">RELINQUISHED BY:</td> <td colspan="2">RECEIVED BY:</td> <td colspan="2">RECEIVED BY:</td> <td colspan="2">METHOD OF SHIPMENT</td> </tr> <tr> <td>Name: PORTY</td> <td>Date: 18/01/17</td> <td>Name: SCOTT</td> <td>Date: 18/1/17</td> <td>Name: JALPY RUTH</td> <td>Date: 22/1</td> <td>Con' Note No:</td> <td></td> </tr> <tr> <td>Of: AECOM</td> <td>Time: 16:00</td> <td>Of: ALS</td> <td>Time: 6:00</td> <td>Of: [REDACTED]</td> <td>Time: 3:10</td> <td>Transport Co:</td> <td></td> </tr> </table>								RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT		Name: PORTY	Date: 18/01/17	Name: SCOTT	Date: 18/1/17	Name: JALPY RUTH	Date: 22/1	Con' Note No:		Of: AECOM	Time: 16:00	Of: ALS	Time: 6:00	Of: [REDACTED]	Time: 3:10	Transport Co:	
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT																									
Name: PORTY	Date: 18/01/17	Name: SCOTT	Date: 18/1/17	Name: JALPY RUTH	Date: 22/1	Con' Note No:																									
Of: AECOM	Time: 16:00	Of: ALS	Time: 6:00	Of: [REDACTED]	Time: 3:10	Transport Co:																									
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; V = VOA Vial Sulfuric Preserved; VS = VOA Vial Sodium Bleachate Preserved; VB = VOA Vial HCl Preserved; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag. Soil Container Codes: Jar = Unpreserved Glass Jar																															

2

From: [REDACTED]
Sent: Monday, 21 January 2019 2:45 PM
To: [REDACTED]
Subject: RE: On Hold - EM1900656 - AECOMAU (60592634)

Hi [REDACTED]

Please analyse:

1. CPT126A_BH48_180119_0.0 = IWRG621
2. CPT126A_BH48_180119_1.5 = IWRG621
3. CPT126A_BH48_180119_0.0 = IWRG621
4. CPT126C_BH49_180119_1.0 = IWRG621
5. CPT131-A_BH51_180119_0.0 = IWRG621
6. CPT131-A_BH51_180119_0.5 = IWRG621
7. CPT126A_BH48_180119_1.0 = Chromium Suite (EA033)
8. CPT126A_BH48_180119_2.0 = Chromium Suite (EA033)
9. CPT126A_BH48_180119_0.5 = Chromium Suite (EA033)
10. CPT126A_BH48_180119_1.5 = Chromium Suite (EA033)
11. CPT131-A_BH51_180119_0.5 = Chromium Suite (EA033)
12. CPT131-A_BH51_180119_1.5 = Chromium Suite (EA033)
13. QC154_180119 = IWRG621
14. QC254_180119 = IWRG621 (Triplicate, please forward to Eurofins)
15. QC354_180119 = IWRG621 water equivalent
16. QC454_180119 = TPH(C6-C9)/BTEXN
17. QC559_180119 = TPH(C6-C9)/BTEXN
18. QC560_180119 = TPH(C6-C9)/BTEXN

At 3 days TAT. Thanks!

[REDACTED]
Senior Environmental Engineer
[REDACTED]
[REDACTED]

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

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From: [REDACTED]
Sent: Monday, 21 January 2019 10:33 AM
To: [REDACTED]
Subject: On Hold - EM1900656 - AECOMAU (60592634)

Hi [REDACTED]

Please see attached samples received without analysis.

Thanks

Religuard 6
RCA
22/1/19
2.20 PM

Jalpa Puri
22/1/19 3:10 PM
636943

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**
Contact name: [REDACTED]
Project name: **GAS IMPORT JETTY PIPELINE PROJECT (GIJPP)EES**
Project ID: **60592634**
COC number: **Not provided**
Turn around time: **3 Day**
Date/Time received: **Jan 22, 2019 3:10 PM**
Eurofins | mgt reference: **636943**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : .5 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : +61 3 8564 5000 or by e.mail: [REDACTED]

Results will be delivered electronically via e.mail to [REDACTED]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report 636943-S
Project name GAS IMPORT JETTY PIPELINE PROJECT (GIJPP)EES
Project ID 60592634
Received Date Jan 22, 2019

Client Sample ID			QC254_180119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja17180
Date Sampled			Jan 18, 2019
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
Volatile Organics			
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Volatile Organics			
1,1-Dichloroethane	0.5	mg/kg	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5

Client Sample ID			QC254_180119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja17180
Date Sampled			Jan 18, 2019
Test/Reference	LOR	Unit	
Volatile Organics			
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	107
Toluene-d8 (surr.)	1	%	110
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			QC254_180119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja17180
Date Sampled			Jan 18, 2019
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	82
p-Terphenyl-d14 (surr.)	1	%	103
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchloroendate (surr.)	1	%	90
Tetrachloro-m-xylene (surr.)	1	%	59
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1

Client Sample ID			QC254_180119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja17180
Date Sampled			Jan 18, 2019
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls			
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchloredate (surr.)	1	%	90
Tetrachloro-m-xylene (surr.)	1	%	59
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	79
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride	100	mg/kg	420
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.8
% Moisture	1	%	22
Heavy Metals			
Arsenic	2	mg/kg	< 2
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	91
Copper	5	mg/kg	11
Lead	5	mg/kg	10
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	12
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	5.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Jan 23, 2019	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Jan 23, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Jan 23, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Jan 23, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Jan 23, 2019	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Jan 23, 2019	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Jan 24, 2019	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Jan 23, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Jan 23, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Jan 22, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008
Project Name: GAS IMPORT JETTY PIPELINE PROJECT (GIJPP)EES
Project ID: 60592634

Order No.:
Report #: 636943
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Jan 22, 2019 3:10 PM
Due: Jan 25, 2019
Priority: 3 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IW/RG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	QC254_180119	Jan 18, 2019	10:55AM	Soil	M19-Ja17180	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPa, PFHx, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
1,2,4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1,1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1,1,1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,1,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,3,5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1,2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1,3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	106			70-130	Pass	
TRH C10-C14	%	107			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	91			70-130	Pass	
1.1.1-Trichloroethane	%	84			70-130	Pass	
1.2-Dichlorobenzene	%	102			70-130	Pass	
1.2-Dichloroethane	%	98			70-130	Pass	
Benzene	%	89			70-130	Pass	
Ethylbenzene	%	111			70-130	Pass	
m&p-Xylenes	%	111			70-130	Pass	
Toluene	%	105			70-130	Pass	
Trichloroethene	%	81			70-130	Pass	
Xylenes - Total	%	109			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	95			70-130	Pass	
TRH C6-C10	%	107			70-130	Pass	
TRH >C10-C16	%	111			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	84			70-130	Pass	
Acenaphthylene	%	83			70-130	Pass	
Anthracene	%	96			70-130	Pass	
Benz(a)anthracene	%	80			70-130	Pass	
Benzo(a)pyrene	%	116			70-130	Pass	
Benzo(b&j)fluoranthene	%	77			70-130	Pass	
Benzo(g,h,i)perylene	%	92			70-130	Pass	
Benzo(k)fluoranthene	%	80			70-130	Pass	
Chrysene	%	80			70-130	Pass	
Dibenz(a,h)anthracene	%	111			70-130	Pass	
Fluoranthene	%	109			70-130	Pass	
Fluorene	%	90			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	128			70-130	Pass	
Naphthalene	%	81			70-130	Pass	
Phenanthrene	%	109			70-130	Pass	
Pyrene	%	118			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	119			70-130	Pass	
4.4'-DDD	%	103			70-130	Pass	
4.4'-DDE	%	96			70-130	Pass	
a-BHC	%	114			70-130	Pass	
Aldrin	%	114			70-130	Pass	
b-BHC	%	96			70-130	Pass	
d-BHC	%	90			70-130	Pass	
Dieldrin	%	82			70-130	Pass	
Endosulfan I	%	108			70-130	Pass	
Endosulfan II	%	87			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin			%	75			70-130	Pass	
Endrin aldehyde			%	106			70-130	Pass	
g-BHC (Lindane)			%	112			70-130	Pass	
Heptachlor epoxide			%	83			70-130	Pass	
Hexachlorobenzene			%	129			70-130	Pass	
LCS - % Recovery									
Phenols (Halogenated)									
2-Chlorophenol			%	44			30-130	Pass	
2,4-Dichlorophenol			%	41			30-130	Pass	
2,4,5-Trichlorophenol			%	106			30-130	Pass	
2,4,6-Trichlorophenol			%	86			30-130	Pass	
2,6-Dichlorophenol			%	38			30-130	Pass	
4-Chloro-3-methylphenol			%	87			30-130	Pass	
Pentachlorophenol			%	87			30-130	Pass	
Tetrachlorophenols - Total			%	49			30-130	Pass	
LCS - % Recovery									
Phenols (non-Halogenated)									
2-Cyclohexyl-4,6-dinitrophenol			%	81			30-130	Pass	
2-Methyl-4,6-dinitrophenol			%	116			30-130	Pass	
2-Methylphenol (o-Cresol)			%	44			30-130	Pass	
2-Nitrophenol			%	66			30-130	Pass	
2,4-Dimethylphenol			%	42			30-130	Pass	
2,4-Dinitrophenol			%	84			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)			%	97			30-130	Pass	
4-Nitrophenol			%	83			30-130	Pass	
Dinoseb			%	109			30-130	Pass	
Phenol			%	43			30-130	Pass	
LCS - % Recovery									
Chromium (hexavalent)			%	102			70-130	Pass	
Cyanide (total)			%	84			70-130	Pass	
Fluoride			%	114			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	114			80-120	Pass	
Cadmium			%	110			80-120	Pass	
Chromium			%	119			80-120	Pass	
Copper			%	117			80-120	Pass	
Lead			%	118			80-120	Pass	
Mercury			%	113			75-125	Pass	
Molybdenum			%	114			80-120	Pass	
Nickel			%	115			80-120	Pass	
Selenium			%	113			80-120	Pass	
Silver			%	115			80-120	Pass	
Tin			%	118			80-120	Pass	
Zinc			%	115			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M19-Ja18874	NCP	%	120			70-130	Pass	
TRH C10-C14	M19-Ja18874	NCP	%	122			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1,1-Dichloroethene	M19-Ja18874	NCP	%	91			70-130	Pass	
1,1,1-Trichloroethane	M19-Ja18874	NCP	%	88			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1,2-Dichlorobenzene	M19-Ja18874	NCP	%	95			70-130	Pass	
1,2-Dichloroethane	M19-Ja18874	NCP	%	92			70-130	Pass	
Benzene	M19-Ja18874	NCP	%	78			70-130	Pass	
Ethylbenzene	M19-Ja18874	NCP	%	100			70-130	Pass	
m&p-Xylenes	M19-Ja18874	NCP	%	101			70-130	Pass	
o-Xylene	M19-Ja18874	NCP	%	99			70-130	Pass	
Toluene	M19-Ja18874	NCP	%	108			70-130	Pass	
Trichloroethene	M19-Ja18874	NCP	%	83			70-130	Pass	
Xylenes - Total	M19-Ja18874	NCP	%	100			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M19-Ja18874	NCP	%	86			70-130	Pass	
TRH C6-C10	M19-Ja18874	NCP	%	115			70-130	Pass	
TRH >C10-C16	M19-Ja18874	NCP	%	127			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M19-Ja13403	NCP	%	103			70-130	Pass	
Acenaphthylene	M19-Ja13403	NCP	%	106			70-130	Pass	
Anthracene	M19-Ja13403	NCP	%	96			70-130	Pass	
Benz(a)anthracene	M19-Ja13403	NCP	%	111			70-130	Pass	
Benzo(a)pyrene	M19-Ja13403	NCP	%	130			70-130	Pass	
Benzo(b&j)fluoranthene	M19-Ja13403	NCP	%	98			70-130	Pass	
Benzo(g,h,i)perylene	M19-Ja13403	NCP	%	105			70-130	Pass	
Benzo(k)fluoranthene	M19-Ja13403	NCP	%	120			70-130	Pass	
Chrysene	M19-Ja13403	NCP	%	114			70-130	Pass	
Dibenz(a,h)anthracene	M19-Ja13403	NCP	%	120			70-130	Pass	
Fluoranthene	M19-Ja13403	NCP	%	123			70-130	Pass	
Fluorene	M19-Ja13403	NCP	%	105			70-130	Pass	
Indeno(1,2,3-cd)pyrene	M19-Ja13403	NCP	%	115			70-130	Pass	
Naphthalene	M19-Ja13403	NCP	%	98			70-130	Pass	
Phenanthrene	M19-Ja13403	NCP	%	110			70-130	Pass	
Pyrene	M19-Ja13403	NCP	%	127			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S19-Ja13876	NCP	%	103			70-130	Pass	
4,4'-DDD	M19-Ja19082	NCP	%	79			70-130	Pass	
4,4'-DDE	M19-Ja19082	NCP	%	108			70-130	Pass	
4,4'-DDT	M19-Ja12590	NCP	%	75			70-130	Pass	
a-BHC	S19-Ja13876	NCP	%	112			70-130	Pass	
Aldrin	S19-Ja13876	NCP	%	123			70-130	Pass	
b-BHC	S19-Ja13876	NCP	%	99			70-130	Pass	
d-BHC	S19-Ja13876	NCP	%	111			70-130	Pass	
Dieldrin	M19-Ja12590	NCP	%	130			70-130	Pass	
Endosulfan I	S19-Ja13876	NCP	%	105			70-130	Pass	
Endosulfan II	S19-Ja13876	NCP	%	114			70-130	Pass	
Endosulfan sulphate	S19-Ja13876	NCP	%	96			70-130	Pass	
Endrin	S19-Ja13876	NCP	%	88			70-130	Pass	
Endrin aldehyde	S19-Ja13876	NCP	%	83			70-130	Pass	
Endrin ketone	M19-Ja12590	NCP	%	92			70-130	Pass	
g-BHC (Lindane)	S19-Ja13876	NCP	%	103			70-130	Pass	
Heptachlor epoxide	S19-Ja13876	NCP	%	85			70-130	Pass	
Hexachlorobenzene	M19-Ja12590	NCP	%	110			70-130	Pass	
Methoxychlor	M19-Ja12590	NCP	%	90			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M19-Ja13403	NCP	%	95			30-130	Pass	
2,4-Dichlorophenol	M19-Ja13403	NCP	%	78			30-130	Pass	
2,4,5-Trichlorophenol	M19-Ja13403	NCP	%	82			30-130	Pass	
2,4,6-Trichlorophenol	M19-Ja13403	NCP	%	63			30-130	Pass	
2,6-Dichlorophenol	M19-Ja13403	NCP	%	129			30-130	Pass	
4-Chloro-3-methylphenol	M19-Ja13403	NCP	%	68			30-130	Pass	
Pentachlorophenol	B19-Ja08462	NCP	%	70			30-130	Pass	
Tetrachlorophenols - Total	M19-Ja13403	NCP	%	46			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4,6-dinitrophenol	M19-Ja13403	NCP	%	66			30-130	Pass	
2-Methyl-4,6-dinitrophenol	B19-Ja08462	NCP	%	83			30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Ja13403	NCP	%	92			30-130	Pass	
2-Nitrophenol	M19-Ja13403	NCP	%	63			30-130	Pass	
2,4-Dimethylphenol	M19-Ja13403	NCP	%	80			30-130	Pass	
2,4-Dinitrophenol	B19-Ja08462	NCP	%	71			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Ja13403	NCP	%	103			30-130	Pass	
4-Nitrophenol	M19-Ja13403	NCP	%	60			30-130	Pass	
Dinoseb	B19-Ja08462	NCP	%	84			30-130	Pass	
Phenol	M19-Ja13403	NCP	%	95			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M19-Ja17037	NCP	%	116			70-130	Pass	
Cyanide (total)	M19-Ja19082	NCP	%	66			70-130	Fail	Q08
Fluoride	M19-Ja18228	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M19-Ja13396	NCP	%	86			75-125	Pass	
Cadmium	M19-Ja13396	NCP	%	90			75-125	Pass	
Chromium	M19-Ja13396	NCP	%	83			75-125	Pass	
Copper	M19-Ja13396	NCP	%	88			75-125	Pass	
Lead	M19-Ja13396	NCP	%	93			75-125	Pass	
Mercury	M19-Ja13396	NCP	%	98			70-130	Pass	
Molybdenum	M19-Ja13396	NCP	%	90			75-125	Pass	
Nickel	M19-Ja13396	NCP	%	85			75-125	Pass	
Selenium	M19-Ja13396	NCP	%	86			75-125	Pass	
Silver	M19-Ja13396	NCP	%	95			75-125	Pass	
Tin	M19-Ja13396	NCP	%	93			75-125	Pass	
Zinc	M19-Ja13396	NCP	%	86			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M19-Ja17180	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M19-Ja18869	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M19-Ja18869	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M19-Ja18869	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1,2,4-Trichlorobenzene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.1-Dichloroethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1-Dichloroethene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.1-Trichloroethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.1.2-Tetrachloroethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.2-Trichloroethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.2.2-Tetrachloroethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dibromoethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichlorobenzene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloroethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloropropane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.3-Trichloropropane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.4-Trimethylbenzene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichlorobenzene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichloropropane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3.5-Trimethylbenzene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.4-Dichlorobenzene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Butanone (MEK)	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Propanone (Acetone)	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chlorotoluene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Methyl-2-pentanone (MIBK)	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Allyl chloride	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzene	M19-Ja17180	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Bromobenzene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromochloromethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromodichloromethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromoform	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromomethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon disulfide	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon Tetrachloride	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chlorobenzene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroform	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloromethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.2-Dichloroethene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1.3-Dichloropropene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromochloromethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromomethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dichlorodifluoromethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Ethylbenzene	M19-Ja17180	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Iodomethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Isopropyl benzene (Cumene)	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
m&p-Xylenes	M19-Ja17180	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methylene Chloride	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
o-Xylene	M19-Ja17180	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Styrene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Toluene	M19-Ja17180	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
trans-1.2-Dichloroethene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1.3-Dichloropropene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Xylenes - Total	M19-Ja17180	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass

Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	M19-Ja17180	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M19-Ja18869	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	M19-Ja18869	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	M19-Ja18869	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M19-Ja17180	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M19-Ja17180	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M19-Ja17180	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M19-Ja17180	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M19-Ja17180	CP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M19-Ja17180	CP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M19-Ja17180	CP	mg/kg	< 1	< 1	<1	30%	Pass

Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M19-Ja17180	CP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M19-Ja17180	CP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M19-Ja17180	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	M19-Ja17180	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M19-Ja17180	CP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M19-Ja17180	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M19-Ja17180	CP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M19-Ja17180	CP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M19-Ja17180	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M19-Ja17180	CP	mg/kg	< 1	< 1	<1	30%	Pass
Fluoride	M19-Ja18223	NCP	mg/kg	< 100	< 100	<1	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	S19-Ja11378	NCP	pH Units	4.8	4.8	pass	30%	Pass
% Moisture	M19-Ja17038	NCP	%	19	19	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M19-Ja17180	CP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	M19-Ja17180	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M19-Ja17180	CP	mg/kg	91	100	14	30%	Pass
Copper	M19-Ja17180	CP	mg/kg	11	12	7.0	30%	Pass
Lead	M19-Ja17180	CP	mg/kg	10	9.7	6.0	30%	Pass
Mercury	M19-Ja17180	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M19-Ja17180	CP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M19-Ja17180	CP	mg/kg	12	13	13	30%	Pass
Selenium	M19-Ja17180	CP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M19-Ja17180	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tin	M19-Ja17180	CP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M19-Ja17180	CP	mg/kg	5.5	6.0	10	30%	Pass

Comments






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)



General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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1

From: [REDACTED]
Sent: Thursday, 24 January 2019 11:47 AM
To: [REDACTED]
Subject: RE: On Hold - EM1900908 - AECOMAU (60592634)

Hi [REDACTED]

Please analyse:

24/1/19 11:47 am
L.F 637 420

1. CPT082_BH31_230119_0.0 = IWRG621
2. CPT082_BH31_230119_0.5 = IWRG621
3. CPT082_BH204_230119_0.0 = IWRG621
4. CPT082_BH204_230119_0.5 = IWRG621
5. CPT082_BH31_230119_0.5 = Chromium Suite (EA033)
6. CPT082_BH31_230119_2.0 = Chromium Suite (EA033)
7. CPT082_BH201_230119_0.5 = Chromium Suite (EA033)
8. CPT082_BH201_230119_1.5 = Chromium Suite (EA033)
9. CPT082_BH202_230119_0.5 = SPOCAS (EA029)
10. CPT082_BH202_230119_1.5 = SPOCAS (EA029)
11. CPT082_BH203_230119_0.5 = Chromium Suite (EA033)
12. CPT082_BH203_230119_1.5 = Chromium Suite (EA033)
13. CPT082_BH204_230119_0.5 = Chromium Suite (EA033)
14. CPT082_BH204_230119_1.5 = Chromium Suite (EA033)
15. QC155_230119 = IWRG621
16. QC255_230119 = IWRG621 (Triplicate, please forward to Eurofins)
17. QC355_230119 = IWRG621 water equivalent
18. QC455_230119 = TPH(C6-C9)/BTEXN
19. QC561_230119 = TPH(C6-C9)/BTEXN
20. QC562_230119 = TPH(C6-C9)/BTEXN

At 3 days TAT. Thanks!

[REDACTED]
Senior Environmental Engineer
[REDACTED]
[\[REDACTED\]@aecom.com](mailto:[REDACTED]@aecom.com)

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

[LinkedIn](#) [Twitter](#) [Facebook](#) [Instagram](#)

From: [REDACTED]@alsglobal.com]
Sent: Thursday, 24 January 2019 10:29 AM
To: [REDACTED]
Subject: On Hold - EM1900908 - AECOMAU (60592634)

Hi [REDACTED]

Please find attached samples on hold

Thanks

Relay and 5
R (M)
24/1/19

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**
Contact name: **[REDACTED]**
Project name: **GAS IMPORT JETTY PROJECT (GIJPP) EES**
Project ID: **60592634**
COC number: **Not provided**
Turn around time: **3 Day**
Date/Time received: **Jan 24, 2019 11:47 PM**
Eurofins | mgt reference: **637420**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 3.1 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you **[REDACTED]**

[REDACTED] on Phone : +61 3 8564 5000 or by e.mail: **[REDACTED]**

Results will be delivered electronically via e.mail to **[REDACTED]**

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report 637420-S
Project name GAS IMPORT JETTY PROJECT (GIJPP) EES
Project ID 60592634
Received Date Jan 24, 2019

Client Sample ID			QC255_230119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja20829
Date Sampled			Jan 23, 2019
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
Volatile Organics			
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Volatile Organics			
1,1-Dichloroethane	0.5	mg/kg	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5

Client Sample ID			QC255_230119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja20829
Date Sampled			Jan 23, 2019
Test/Reference	LOR	Unit	
Volatile Organics			
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	125
Toluene-d8 (surr.)	1	%	112
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			QC255_230119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja20829
Date Sampled			Jan 23, 2019
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	66
p-Terphenyl-d14 (surr.)	1	%	83
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchloroendate (surr.)	1	%	81
Tetrachloro-m-xylene (surr.)	1	%	90
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1

Client Sample ID			QC255_230119
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ja20829
Date Sampled			Jan 23, 2019
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls			
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchloredate (surr.)	1	%	81
Tetrachloro-m-xylene (surr.)	1	%	90
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	35
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride	100	mg/kg	< 100
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.9
% Moisture	1	%	13
Heavy Metals			
Arsenic	2	mg/kg	4.9
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	33
Copper	5	mg/kg	16
Lead	5	mg/kg	10
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	15
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	16

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jan 25, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Jan 25, 2019	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Jan 25, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 25, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 25, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 25, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Jan 25, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Jan 25, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Jan 25, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Jan 25, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Jan 25, 2019	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Jan 31, 2019	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Jan 26, 2019	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Jan 25, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Jan 25, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Jan 24, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008
Project Name: GAS IMPORT JETTY PROJECT (GIJPP) EES
Project ID: 60592634

Order No.:
Report #: 637420
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Jan 24, 2019 11:47 PM
Due: Jan 31, 2019
Priority: 3 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IWRG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	QC255_230119	Jan 23, 2019		Soil	M19-Ja20829	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPa, PFHx, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
1,2,4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1,1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1,1,1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,1,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,3,5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1,2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1,3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	102			70-130	Pass	
TRH C10-C14	%	99			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1.1-Trichloroethane	%	97			70-130	Pass	
1.2-Dichlorobenzene	%	105			70-130	Pass	
1.2-Dichloroethane	%	91			70-130	Pass	
Benzene	%	87			70-130	Pass	
Ethylbenzene	%	92			70-130	Pass	
m&p-Xylenes	%	96			70-130	Pass	
Toluene	%	111			70-130	Pass	
Trichloroethene	%	76			70-130	Pass	
Xylenes - Total	%	95			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	79			70-130	Pass	
TRH C6-C10	%	102			70-130	Pass	
TRH >C10-C16	%	104			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	87			70-130	Pass	
Acenaphthylene	%	78			70-130	Pass	
Anthracene	%	82			70-130	Pass	
Benz(a)anthracene	%	80			70-130	Pass	
Benzo(a)pyrene	%	86			70-130	Pass	
Benzo(b&j)fluoranthene	%	89			70-130	Pass	
Benzo(g,h,i)perylene	%	87			70-130	Pass	
Benzo(k)fluoranthene	%	87			70-130	Pass	
Chrysene	%	89			70-130	Pass	
Dibenz(a,h)anthracene	%	103			70-130	Pass	
Fluoranthene	%	98			70-130	Pass	
Fluorene	%	89			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	93			70-130	Pass	
Naphthalene	%	83			70-130	Pass	
Phenanthrene	%	98			70-130	Pass	
Pyrene	%	108			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	93			70-130	Pass	
4,4'-DDD	%	112			70-130	Pass	
4,4'-DDE	%	104			70-130	Pass	
4,4'-DDT	%	86			70-130	Pass	
a-BHC	%	96			70-130	Pass	
Aldrin	%	92			70-130	Pass	
b-BHC	%	78			70-130	Pass	
d-BHC	%	83			70-130	Pass	
Dieldrin	%	98			70-130	Pass	
Endosulfan I	%	91			70-130	Pass	
Endosulfan II	%	124			70-130	Pass	
Endosulfan sulphate	%	75			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin			%	109			70-130	Pass	
Endrin aldehyde			%	81			70-130	Pass	
Endrin ketone			%	107			70-130	Pass	
g-BHC (Lindane)			%	118			70-130	Pass	
Heptachlor			%	79			70-130	Pass	
Heptachlor epoxide			%	85			70-130	Pass	
Hexachlorobenzene			%	116			70-130	Pass	
Methoxychlor			%	85			70-130	Pass	
LCS - % Recovery									
Chromium (hexavalent)			%	97			70-130	Pass	
Fluoride			%	94			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic		%	110				80-120	Pass	
Cadmium		%	107				80-120	Pass	
Chromium		%	114				80-120	Pass	
Copper		%	110				80-120	Pass	
Lead		%	110				80-120	Pass	
Mercury		%	114				75-125	Pass	
Molybdenum		%	111				80-120	Pass	
Nickel		%	108				80-120	Pass	
Selenium		%	112				80-120	Pass	
Silver		%	110				80-120	Pass	
Tin		%	118				80-120	Pass	
Zinc		%	109				80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M19-Ja21548	NCP	%	84			70-130	Pass	
TRH C10-C14	M19-Ja20860	NCP	%	125			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1.1-Trichloroethane	M19-Ja21548	NCP	%	92			70-130	Pass	
1.2-Dichlorobenzene	M19-Ja21548	NCP	%	93			70-130	Pass	
1.2-Dichloroethane	M19-Ja21548	NCP	%	95			70-130	Pass	
Benzene	M19-Ja21548	NCP	%	84			70-130	Pass	
Ethylbenzene	M19-Ja21548	NCP	%	83			70-130	Pass	
m&p-Xylenes	M19-Ja21548	NCP	%	86			70-130	Pass	
o-Xylene	M19-Ja21548	NCP	%	84			70-130	Pass	
Toluene	M19-Ja21548	NCP	%	109			70-130	Pass	
Trichloroethene	M19-Ja21548	NCP	%	97			70-130	Pass	
Xylenes - Total	M19-Ja21548	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M19-Ja21548	NCP	%	74			70-130	Pass	
TRH C6-C10	M19-Ja21548	NCP	%	85			70-130	Pass	
TRH >C10-C16	M19-Ja20860	NCP	%	126			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M19-Ja16151	NCP	%	104			70-130	Pass	
Acenaphthylene	M19-Ja16151	NCP	%	99			70-130	Pass	
Anthracene	M19-Ja16151	NCP	%	98			70-130	Pass	
Benz(a)anthracene	M19-Ja16151	NCP	%	94			70-130	Pass	
Benzo(a)pyrene	M19-Ja16151	NCP	%	123			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene	M19-Ja16151	NCP	%	105			70-130	Pass	
Benzo(g,h,i)perylene	M19-Ja16151	NCP	%	119			70-130	Pass	
Benzo(k)fluoranthene	M19-Ja16151	NCP	%	119			70-130	Pass	
Chrysene	M19-Ja16151	NCP	%	100			70-130	Pass	
Dibenz(a,h)anthracene	M19-Ja16151	NCP	%	126			70-130	Pass	
Fluoranthene	M19-Ja16151	NCP	%	121			70-130	Pass	
Fluorene	M19-Ja16151	NCP	%	112			70-130	Pass	
Indeno(1,2,3-cd)pyrene	M19-Ja16151	NCP	%	109			70-130	Pass	
Naphthalene	M19-Ja16151	NCP	%	107			70-130	Pass	
Phenanthrene	M19-Ja16151	NCP	%	111			70-130	Pass	
Pyrene	M19-Ja16151	NCP	%	128			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M19-Ja20860	NCP	%	111			70-130	Pass	
4,4'-DDD	M19-Ja20860	NCP	%	130			70-130	Pass	
4,4'-DDE	M19-Ja20860	NCP	%	92			70-130	Pass	
a-BHC	M19-Ja20860	NCP	%	74			70-130	Pass	
Aldrin	M19-Ja20860	NCP	%	75			70-130	Pass	
d-BHC	M19-Ja20860	NCP	%	74			70-130	Pass	
Dieldrin	M19-Ja20860	NCP	%	89			70-130	Pass	
Endosulfan I	M19-Ja20860	NCP	%	80			70-130	Pass	
Endosulfan II	M19-Ja20860	NCP	%	115			70-130	Pass	
Endrin ketone	M19-Ja20860	NCP	%	91			70-130	Pass	
g-BHC (Lindane)	M19-Ja20860	NCP	%	96			70-130	Pass	
Heptachlor	M19-Ja20860	NCP	%	105			70-130	Pass	
Heptachlor epoxide	M19-Ja20870	NCP	%	85			70-130	Pass	
Hexachlorobenzene	M19-Ja20860	NCP	%	94			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M19-Ja16151	NCP	%	69			30-130	Pass	
2,4-Dichlorophenol	M19-Ja16151	NCP	%	48			30-130	Pass	
2,4,5-Trichlorophenol	M19-Ja16151	NCP	%	116			30-130	Pass	
2,4,6-Trichlorophenol	M19-Ja16151	NCP	%	124			30-130	Pass	
2,6-Dichlorophenol	M19-Ja16151	NCP	%	74			30-130	Pass	
4-Chloro-3-methylphenol	M19-Ja16151	NCP	%	71			30-130	Pass	
Tetrachlorophenols - Total	M19-Ja16151	NCP	%	38			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Methylphenol (o-Cresol)	M19-Ja16151	NCP	%	66			30-130	Pass	
2-Nitrophenol	M19-Ja16151	NCP	%	35			30-130	Pass	
2,4-Dimethylphenol	M19-Ja16151	NCP	%	80			30-130	Pass	
2,4-Dinitrophenol	M19-Ja16151	NCP	%	44			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Ja16151	NCP	%	83			30-130	Pass	
Phenol	M19-Ja16151	NCP	%	73			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M19-Ja14513	NCP	%	97			70-130	Pass	
Fluoride	M19-Ja16292	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M19-Ja20870	NCP	%	128			75-125	Fail	Q08
Cadmium	M19-Ja20870	NCP	%	103			75-125	Pass	
Chromium	M19-Ja20870	NCP	%	124			75-125	Pass	
Copper	M19-Ja20870	NCP	%	112			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead	M19-Ja20870	NCP	%	116			75-125	Pass	
Mercury	M19-Ja20870	NCP	%	101			70-130	Pass	
Molybdenum	M19-Ja20870	NCP	%	120			75-125	Pass	
Nickel	M19-Ja20870	NCP	%	112			75-125	Pass	
Selenium	M19-Ja20870	NCP	%	115			75-125	Pass	
Silver	M19-Ja20870	NCP	%	105			75-125	Pass	
Tin	M19-Ja20870	NCP	%	122			75-125	Pass	
Zinc	M19-Ja20870	NCP	%	109			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M19-Ja24202	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M19-Ja20859	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M19-Ja20859	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M19-Ja20859	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1,2,4-Trichlorobenzene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1,1-Dichloroethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1-Dichloroethene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,1-Trichloroethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,1,2-Tetrachloroethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,2-Trichloroethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,1,2,2-Tetrachloroethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2-Dibromoethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2-Dichlorobenzene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2-Dichloroethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2-Dichloropropane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2,3-Trichloropropane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,2,4-Trimethylbenzene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,3-Dichlorobenzene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,3-Dichloropropane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,3,5-Trimethylbenzene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1,4-Dichlorobenzene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M19-Ja24202	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
cis-1,2-Dichloroethene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1,3-Dichloropropene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromochloromethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromomethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dichlorodifluoromethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Ethylbenzene	M19-Ja24202	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Iodomethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Isopropyl benzene (Cumene)	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
m&p-Xylenes	M19-Ja24202	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methylene Chloride	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
o-Xylene	M19-Ja24202	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Styrene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Toluene	M19-Ja24202	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
trans-1,2-Dichloroethene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1,3-Dichloropropene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Xylenes - Total	M19-Ja24202	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M19-Ja24202	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	M19-Ja24202	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M19-Ja20859	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	M19-Ja20859	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	M19-Ja20859	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M19-Ja20859	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
d-BHC	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M19-Ja20859	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M19-Ja20859	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M19-Ja20859	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M19-Ja20859	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M19-Ja20859	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M19-Ja20859	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M19-Ja20859	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M19-Ja20859	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M19-Ja20859	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	M19-Ja20859	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M19-Ja20859	NCP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M19-Ja20859	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M19-Ja20859	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M19-Ja20859	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M19-Ja20859	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M19-Ja14512	NCP	mg/kg	48	50	4.0	30%	Pass
Fluoride	M19-Ja21493	NCP	mg/kg	< 100	< 100	<1	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	M19-Ja20829	CP	pH Units	5.9	5.8	pass	30%	Pass
% Moisture	M19-Ja20859	NCP	%	9.9	9.9	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M19-Ja20870	NCP	mg/kg	43	46	7.0	30%	Pass
Cadmium	M19-Ja20870	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M19-Ja20870	NCP	mg/kg	59	62	6.0	30%	Pass
Copper	M19-Ja20870	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	M19-Ja20870	NCP	mg/kg	9.0	9.6	7.0	30%	Pass
Mercury	M19-Ja20870	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M19-Ja20870	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M19-Ja20870	NCP	mg/kg	7.6	8.1	7.0	30%	Pass
Selenium	M19-Ja20870	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M19-Ja20870	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Tin	M19-Ja20870	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M19-Ja20870	NCP	mg/kg	< 5	< 5	<1	30%	Pass

Comments






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)



General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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ANZ
FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

AECOM 22

CONSULTANT: AECOM Australia		ADDRESS / OFFICE: Melbourne		SAMPLE: [REDACTED]		MOBILE: [REDACTED]		PHONE: [REDACTED]		Destination Laboratory: ALS	
PROJECT MANAGER (PM): MW [REDACTED]		SITE: GUPP		P.O. NO.: [REDACTED]		EMAIL REPORT TO: [REDACTED]		PHONE: [REDACTED]		[REDACTED]	
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED (including SUITES (note - suite codes must be listed to attract suite prices))		[REDACTED]		[REDACTED]		[REDACTED]	
<p>FOR LABORATORY USE ONLY</p> <p>COOLER SEAL (circle appropriate): <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>INJECT: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>SAMPLE TEMPERATURE: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>CHILLED: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: Please send OC202 to 2M/4M/14</p>											
SAMPLE INFORMATION (note: S = Soil, W = Water)				CONTAINER INFORMATION				W-6 (TRH/BTEXN/Pb)			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	W-28 (MNA - nitrate, sulfate, methane, ferrous)	W-18 (C6-C9/BTEXN)	W-30 (Dissolved metal incl mercury)	NT-14 (Major ions TDS Nitrate Ammonia Total Phosphorus)	W-23 (TRH SVOC BTEXN VOC)
1	MW01_25/1/19	W	25/1/19	4m	2WS AG, P, N, SH, SP P	1					
2	MW05_25/1/19					7					
3	OC102_25/1/19					7					
→	OC202_25/1/19					7					
4	OC303_25/1/19					7					
<p>W-6 (TRH/BTEXN/Pb)</p> <p>W-28 (MNA - nitrate, sulfate, methane, ferrous)</p> <p>W-18 (C6-C9/BTEXN)</p> <p>W-30 (Dissolved metal incl mercury)</p> <p>NT-14 (Major ions TDS Nitrate Ammonia Total Phosphorus)</p> <p>W-23 (TRH SVOC BTEXN VOC)</p> <p>PFAS (Full Suite LOW LEVEL 28)</p> <p>HOLD</p> <p>Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORS etc.</p>											
<p>RECEIVED BY: Name: Scott Date: 25/1/19 Time: 10:25</p> <p>RECEIVED BY: Name: Mark Date: 25/1/19 Time: 4pm</p> <p>Con' Note No: [REDACTED]</p> <p>Transport Co: [REDACTED]</p> <p>METHOD OF SHIPMENT</p>											

Please do as much analysis as possible with the 1 250P as possible

Environmental Division
Melbourne
Work Order Reference
EM1901029



Telephone : + 61-3-8549 8800

Relinquished by Scott (PNS)
25/1/19, 14:30
Mark Gonzales #1637748
COC Page of

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**

Contact name: [REDACTED]

Project name: **GIJPP**

Project ID: **60592634/TASK 1.0**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Jan 25, 2019 3:50 PM**

Eurofins | mgt reference: **637748**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : .4 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Sample containers for volatile analysis received with zero headspace.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : +61 3 8564 5000 or by e.mail: [REDACTED]

Results will be delivered electronically via e.mail to Mark Wakeman - [REDACTED]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report 637748-W-V2
Project name GIJPP
Project ID 60592634/TASK 1.0
Received Date Jan 25, 2019

Client Sample ID			QC202_25/1/19
Sample Matrix			Water
Eurofins mgt Sample No.			M19-Ja23460
Date Sampled			Jan 25, 2019
Test/Reference	LOR	Unit	
Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.001	mg/L	< 0.001
2-Propanone (Acetone)	0.001	mg/L	< 0.001
4-Chlorotoluene	0.001	mg/L	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001
Allyl chloride	0.001	mg/L	< 0.001
Benzene	0.001	mg/L	< 0.001
Bromobenzene	0.001	mg/L	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.001	mg/L	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroethane	0.001	mg/L	< 0.001
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.001	mg/L	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001

Client Sample ID			QC202_25/1/19
Sample Matrix			Water
Eurofins mgt Sample No.			M19-Ja23460
Date Sampled			Jan 25, 2019
Test/Reference	LOR	Unit	
Volatile Organics			
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Dichlorodifluoromethane	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
Methylene Chloride	0.001	mg/L	< 0.001
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005
4-Bromofluorobenzene (surr.)	1	%	129
Toluene-d8 (surr.)	1	%	147
Semivolatile Organics			
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
1-Chloronaphthalene	0.005	mg/L	< 0.005
1-Naphthylamine	0.005	mg/L	< 0.005
1.2-Dichlorobenzene	0.005	mg/L	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005
2-Chloronaphthalene	0.005	mg/L	< 0.005
2-Chlorophenol	0.003	mg/L	< 0.003
2-Methylnaphthalene	0.005	mg/L	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
2-Naphthylamine	0.005	mg/L	< 0.005
2-Nitroaniline	0.005	mg/L	< 0.005
2-Nitrophenol	0.01	mg/L	< 0.01
2-Picoline	0.005	mg/L	< 0.005
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
2.4-Dinitrotoluene	0.005	mg/L	< 0.005

Client Sample ID			QC202_25/1/19
Sample Matrix			Water
Eurofins mgt Sample No.			M19-Ja23460
Date Sampled			Jan 25, 2019
Test/Reference	LOR	Unit	
Semivolatile Organics			
2,4,5-Trichlorophenol	0.01	mg/L	< 0.01
2,4,6-Trichlorophenol	0.01	mg/L	< 0.01
2,6-Dichlorophenol	0.003	mg/L	< 0.003
2,6-Dinitrotoluene	0.005	mg/L	< 0.005
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
3-Methylcholanthrene	0.005	mg/L	< 0.005
3,3'-Dichlorobenzidine	0.005	mg/L	< 0.005
4-Aminobiphenyl	0.005	mg/L	< 0.005
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005
4-Nitrophenol	0.03	mg/L	< 0.03
4,4'-DDD	0.005	mg/L	< 0.005
4,4'-DDE	0.005	mg/L	< 0.005
4,4'-DDT	0.005	mg/L	< 0.005
7,12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005
a-BHC	0.005	mg/L	< 0.005
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Acetophenone	0.005	mg/L	< 0.005
Aldrin	0.005	mg/L	< 0.005
Aniline	0.005	mg/L	< 0.005
Anthracene	0.001	mg/L	< 0.001
b-BHC	0.005	mg/L	< 0.005
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Benzyl chloride	0.005	mg/L	< 0.005
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005
Butyl benzyl phthalate	0.005	mg/L	< 0.005
Chrysene	0.001	mg/L	< 0.001
d-BHC	0.005	mg/L	< 0.005
Di-n-butyl phthalate	0.005	mg/L	< 0.005
Di-n-octyl phthalate	0.005	mg/L	< 0.005
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001
Dibenz(a,j)acridine	0.005	mg/L	< 0.005
Dibenzofuran	0.005	mg/L	< 0.005
Dieldrin	0.005	mg/L	< 0.005
Diethyl phthalate	0.005	mg/L	< 0.005
Dimethyl phthalate	0.005	mg/L	< 0.005
Dimethylaminoazobenzene	0.005	mg/L	< 0.005
Diphenylamine	0.005	mg/L	< 0.005
Endosulfan I	0.005	mg/L	< 0.005
Endosulfan II	0.005	mg/L	< 0.005
Endosulfan sulphate	0.005	mg/L	< 0.005

Client Sample ID			QC202_25/1/19
Sample Matrix			Water
Eurofins mgt Sample No.			M19-Ja23460
Date Sampled			Jan 25, 2019
Test/Reference	LOR	Unit	
Semivolatile Organics			
Endrin	0.005	mg/L	< 0.005
Endrin aldehyde	0.005	mg/L	< 0.005
Endrin ketone	0.005	mg/L	< 0.005
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
g-BHC (Lindane)	0.005	mg/L	< 0.005
Heptachlor	0.005	mg/L	< 0.005
Heptachlor epoxide	0.005	mg/L	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Methoxychlor	0.005	mg/L	< 0.005
N-Nitrosodibutylamine	0.005	mg/L	< 0.005
N-Nitrosodipropylamine	0.005	mg/L	< 0.005
N-Nitrosopiperidine	0.005	mg/L	< 0.005
Naphthalene	0.001	mg/L	< 0.001
Nitrobenzene	0.05	mg/L	< 0.05
Pentachlorobenzene	0.005	mg/L	< 0.005
Pentachloronitrobenzene	0.005	mg/L	< 0.005
Pentachlorophenol	0.01	mg/L	< 0.01
Phenanthrene	0.001	mg/L	< 0.001
Phenol	0.003	mg/L	< 0.003
Pronamide	0.005	mg/L	< 0.005
Pyrene	0.001	mg/L	< 0.001
Trifluralin	0.005	mg/L	< 0.005
Phenol-d6 (surr.)	1	%	93
Nitrobenzene-d5 (surr.)	1	%	63
2-Fluorobiphenyl (surr.)	1	%	99
2.4.6-Tribromophenol (surr.)	1	%	83
Ammonia (as N)	0.01	mg/L	0.12
Chloride	1	mg/L	2600
Chromium (hexavalent)	0.005	mg/L	< 0.005
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02
Phosphate total (as P)	0.01	mg/L	0.02
Phosphorus reactive (as P)	0.01	mg/L	0.01
Sulphate (as SO4)	5	mg/L	130
Total Dissolved Solids Dried at 180°C	10	mg/L	6300
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2
Total Nitrogen (as N)	0.2	mg/L	< 0.2
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	300
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10
Total Alkalinity (as CaCO3)	20	mg/L	300

Client Sample ID			QC202_25/1/19
Sample Matrix			Water
Eurofins mgt Sample No.			M19-Ja23460
Date Sampled			Jan 25, 2019
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium (filtered)	0.05	mg/L	< 0.05
Arsenic (filtered)	0.001	mg/L	0.004
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Iron (filtered)	0.05	mg/L	1.8
Lead (filtered)	0.001	mg/L	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	0.005
Selenium (filtered)	0.001	mg/L	< 0.001
Zinc (filtered)	0.005	mg/L	0.045
Alkali Metals			
Calcium	0.5	mg/L	170
Magnesium	0.5	mg/L	190
Potassium	0.5	mg/L	< 5
Sodium	0.5	mg/L	1200
Hardness Set			
Hardness mg equivalent CaCO ₃ /L	5	mg/L	1200

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Volatile Organics	Melbourne	Jan 31, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Semivolatile Organics	Melbourne	Jan 31, 2019	7 Day
- Method: LTM-ORG-2190 SVOC in Water & Soil by GC-MS			
Chromium (hexavalent)	Melbourne	Jan 31, 2019	28 Day
- Method: Cr (VI) by MGT 1170A			
Nitrite (as N)	Melbourne	Jan 31, 2019	2 Day
- Method: APHA 4500-NO2 Nitrite Nitrogen by FIA			
Phosphate total (as P)	Melbourne	Jan 31, 2019	28 Day
- Method: APHA 4500-P E. Phosphorus			
Phosphorus reactive (as P)	Melbourne	Jan 31, 2019	2 Day
- Method: APHA4500-PO4			
Total Dissolved Solids Dried at 180°C	Melbourne	Jan 31, 2019	7 Day
- Method: LTM-INO-4170 Total Dissolved Solids in Water			
Alkalinity (speciated)	Melbourne	Jan 31, 2019	14 Day
- Method: APHA 2320 Alkalinity by Titration			
Heavy Metals (filtered)	Melbourne	Jan 31, 2019	180 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Mobil Metals : Metals M15	Melbourne	Feb 21, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Hardness Set			
Calcium	Melbourne	Jan 31, 2019	180 Day
- Method:			
Magnesium	Melbourne	Jan 31, 2019	180 Day
- Method:			
Hardness mg equivalent CaCO3/L	Melbourne	Jan 31, 2019	28 Day
- Method:			
Major Cations			
Ammonia (as N)	Melbourne	Jan 31, 2019	28 Day
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Alkali Metals	Melbourne	Jan 31, 2019	180 Day
- Method: LTM-MET-3010 Alkali Metals S Si and P by ICP-AES			
Major Anions			
Chloride	Melbourne	Jan 31, 2019	28 Day
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Nitrate (as N)	Melbourne	Jan 31, 2019	28 Day
- Method: APHA 4500-NO3 Nitrate Nitrogen by FIA			
Sulphate (as SO4)	Melbourne	Jan 31, 2019	28 Day
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Total Nitrogen Set (as N)			
Nitrate & Nitrite (as N)	Melbourne	Jan 31, 2019	28 Day
- Method: APHA 4500-NO3/NO2 Nitrate-Nitrite Nitrogen by FIA			
Total Kjeldahl Nitrogen (as N)	Melbourne	Jan 31, 2019	7 Day
- Method: LTM-INO-4310 TKN in Waters & Soils by FIA			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008
Project Name: GIJPP
Project ID: 60592634/TASK 1.0

Order No.:
Report #: 637748
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Jan 25, 2019 3:50 PM
Due: Feb 4, 2019
Priority: 5 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Aluminium (filtered)	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Chromium (hexavalent)	Copper (filtered)	Iron (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Nitrite (as N)	Phosphate total (as P)	Phosphorus reactive (as P)	Selenium (filtered)	Total Alkalinity (as CaCO3)	Total Dissolved Solids Dried at 180°C	Zinc (filtered)	Total Nitrogen Set (as N)	Major Anions	Hardness Set	Major Cations	Volatile Organics	Semivolatile Organics
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																												
Brisbane Laboratory - NATA Site # 20794																												
Perth Laboratory - NATA Site # 23736																												
External Laboratory																												
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																							
1	QC202_25/1/19	Jan 25, 2019		Water	M19-Ja23460	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.001			0.001	Pass	
2-Propanone (Acetone)	mg/L	< 0.001			0.001	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.001			0.001	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.001			0.001	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.001			0.001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.001			0.001	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.001			0.001	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Trichlorofluoromethane	mg/L	< 0.001			0.001	Pass	
Vinyl chloride	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Semivolatile Organics							
2-Methyl-4,6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.005			0.005	Pass	
1,2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,3,4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,3,5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,4,5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1,3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,3,5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
2-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2-Methylnaphthalene	mg/L	< 0.005			0.005	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.005			0.005	Pass	
2-Nitroaniline	mg/L	< 0.005			0.005	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2-Picoline	mg/L	< 0.005			0.005	Pass	
2,3,4,6-Tetrachlorophenol	mg/L	< 0.01			0.01	Pass	
2,4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2,4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2,4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2,4-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
2,4,5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2,4,6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2,6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2,6-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.005			0.005	Pass	
3,3'-Dichlorobenzidine	mg/L	< 0.005			0.005	Pass	
4-Aminobiphenyl	mg/L	< 0.005			0.005	Pass	
4-Bromophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
4,4'-DDD	mg/L	< 0.005			0.005	Pass	
4,4'-DDE	mg/L	< 0.005			0.005	Pass	
4,4'-DDT	mg/L	< 0.005			0.005	Pass	
7,12-Dimethylbenz(a)anthracene	mg/L	< 0.005			0.005	Pass	
a-BHC	mg/L	< 0.005			0.005	Pass	
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Acetophenone	mg/L	< 0.005			0.005	Pass	
Aldrin	mg/L	< 0.005			0.005	Pass	
Aniline	mg/L	< 0.005			0.005	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
b-BHC	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.005			0.005	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.005			0.005	Pass	
Butyl benzyl phthalate	mg/L	< 0.005			0.005	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
d-BHC	mg/L	< 0.005			0.005	Pass	
Di-n-butyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-octyl phthalate	mg/L	< 0.005			0.005	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,j)acridine	mg/L	< 0.005			0.005	Pass	
Dibenzofuran	mg/L	< 0.005			0.005	Pass	
Dieldrin	mg/L	< 0.005			0.005	Pass	
Diethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethylaminoazobenzene	mg/L	< 0.005			0.005	Pass	
Diphenylamine	mg/L	< 0.005			0.005	Pass	
Endosulfan I	mg/L	< 0.005			0.005	Pass	
Endosulfan II	mg/L	< 0.005			0.005	Pass	
Endosulfan sulphate	mg/L	< 0.005			0.005	Pass	
Endrin	mg/L	< 0.005			0.005	Pass	
Endrin aldehyde	mg/L	< 0.005			0.005	Pass	
Endrin ketone	mg/L	< 0.005			0.005	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
g-BHC (Lindane)	mg/L	< 0.005			0.005	Pass	
Heptachlor	mg/L	< 0.005			0.005	Pass	
Heptachlor epoxide	mg/L	< 0.005			0.005	Pass	
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Methoxychlor	mg/L	< 0.005			0.005	Pass	
N-Nitrosodibutylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosodipropylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosopiperidine	mg/L	< 0.005			0.005	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Nitrobenzene	mg/L	< 0.05			0.05	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Pentachloronitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.005			0.005	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Trifluralin	mg/L	< 0.005			0.005	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloride	mg/L	< 1			1	Pass	
Chromium (hexavalent)	mg/L	< 0.005			0.005	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	0.01			0.01	Pass	
Sulphate (as SO ₄)	mg/L	< 5			5	Pass	
Total Dissolved Solids Dried at 180°C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO ₃)	mg/L	< 10			10	Pass	
Total Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	77			70-130	Pass	
1.1.1-Trichloroethane	%	78			70-130	Pass	
1.2-Dichlorobenzene	%	99			70-130	Pass	
1.2-Dichloroethane	%	105			70-130	Pass	
Benzene	%	108			70-130	Pass	
Ethylbenzene	%	109			70-130	Pass	
m&p-Xylenes	%	111			70-130	Pass	
Toluene	%	123			70-130	Pass	
Trichloroethene	%	87			70-130	Pass	
Xylenes - Total	%	111			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
1.2.4-Trichlorobenzene	%	83			70-130	Pass	
1.4-Dichlorobenzene	%	101			70-130	Pass	
2-Chlorophenol	%	82			30-130	Pass	
4-Chloro-3-methylphenol	%	57			30-130	Pass	
Acenaphthene	%	79			70-130	Pass	
N-Nitrosodipropylamine	%	110			70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pentachlorophenol				%	79			30-130	Pass	
Phenol				%	50			30-130	Pass	
LCS - % Recovery										
Ammonia (as N)				%	106			70-130	Pass	
Chloride				%	113			70-130	Pass	
Chromium (hexavalent)				%	103			70-130	Pass	
Nitrate & Nitrite (as N)				%	101			70-130	Pass	
Nitrate (as N)				%	101			70-130	Pass	
Nitrite (as N)				%	121			70-130	Pass	
Phosphate total (as P)				%	108			70-130	Pass	
Sulphate (as SO4)				%	111			70-130	Pass	
Total Dissolved Solids Dried at 180°C				%	94			70-130	Pass	
Total Kjeldahl Nitrogen (as N)				%	105			70-130	Pass	
LCS - % Recovery										
Alkalinity (speciated)										
Carbonate Alkalinity (as CaCO3)				%	85			70-130	Pass	
Total Alkalinity (as CaCO3)				%	90			70-130	Pass	
LCS - % Recovery										
Heavy Metals										
Aluminium (filtered)				%	90			80-120	Pass	
Arsenic (filtered)				%	90			80-120	Pass	
Cadmium (filtered)				%	91			80-120	Pass	
Chromium (filtered)				%	90			80-120	Pass	
Copper (filtered)				%	90			80-120	Pass	
Iron (filtered)				%	91			80-120	Pass	
Lead (filtered)				%	89			80-120	Pass	
Mercury (filtered)				%	81			70-130	Pass	
Nickel (filtered)				%	90			80-120	Pass	
Selenium (filtered)				%	90			80-120	Pass	
Zinc (filtered)				%	89			80-120	Pass	
LCS - % Recovery										
Alkali Metals										
Calcium				%	102			70-130	Pass	
Magnesium				%	101			70-130	Pass	
Potassium				%	90			70-130	Pass	
Sodium				%	100			70-130	Pass	
Test		Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Volatile Organics					Result 1					
Benzene	M19-Fe00455	NCP	%	83				70-130	Pass	
Ethylbenzene	M19-Fe00455	NCP	%	112				70-130	Pass	
m&p-Xylenes	M19-Fe00455	NCP	%	115				70-130	Pass	
o-Xylene	M19-Fe00455	NCP	%	116				70-130	Pass	
Toluene	M19-Fe00455	NCP	%	95				70-130	Pass	
Xylenes - Total	M19-Fe00455	NCP	%	116				70-130	Pass	
Spike - % Recovery										
					Result 1					
Ammonia (as N)	M19-Ja26933	NCP	%	104				70-130	Pass	
Chloride	M19-Ja25664	NCP	%	99				70-130	Pass	
Nitrate & Nitrite (as N)	M19-Ja26933	NCP	%	102				70-130	Pass	
Nitrate (as N)	M19-Ja26933	NCP	%	102				70-130	Pass	
Nitrite (as N)	M19-Ja26933	NCP	%	107				70-130	Pass	
Sulphate (as SO4)	B19-Ja22850	NCP	%	98				70-130	Pass	
Spike - % Recovery										

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heavy Metals				Result 1					
Aluminium (filtered)	M19-Ja23293	NCP	%	99			75-125	Pass	
Arsenic (filtered)	M19-Ja27387	NCP	%	98			70-130	Pass	
Cadmium (filtered)	M19-Ja27387	NCP	%	92			70-130	Pass	
Chromium (filtered)	M19-Ja27387	NCP	%	104			70-130	Pass	
Copper (filtered)	M19-Ja23293	NCP	%	85			70-130	Pass	
Iron (filtered)	M19-Ja23293	NCP	%	96			70-130	Pass	
Lead (filtered)	M19-Ja27387	NCP	%	96			70-130	Pass	
Mercury (filtered)	M19-Ja27387	NCP	%	94			70-130	Pass	
Nickel (filtered)	M19-Ja27387	NCP	%	100			70-130	Pass	
Selenium (filtered)	M19-Ja27387	NCP	%	96			70-130	Pass	
Zinc (filtered)	M19-Ja23293	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	B19-Ja26194	NCP	%	104			70-130	Pass	
Magnesium	B19-Ja26194	NCP	%	92			70-130	Pass	
Potassium	B19-Ja26194	NCP	%	92			70-130	Pass	
Sodium	B19-Ja26194	NCP	%	96			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Benzene	S19-Ja26872	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S19-Ja26872	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S19-Ja26872	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S19-Ja26872	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S19-Ja26872	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S19-Ja26872	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M19-Ja26933	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Chloride	P19-Ja22820	NCP	mg/L	3200	3100	2.0	30%	Pass	
Chromium (hexavalent)	M19-Ja24257	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nitrate & Nitrite (as N)	M19-Ja26933	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Nitrate (as N)	M19-Ja26933	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Nitrite (as N)	M19-Ja26933	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phosphate total (as P)	M19-Ja19666	NCP	mg/L	< 0.01	0.11	32	30%	Fail	Q15
Sulphate (as SO ₄)	P19-Ja22820	NCP	mg/L	400	380	5.0	30%	Pass	
Total Dissolved Solids Dried at 180°C	M19-Ja23427	NCP	mg/L	510	610	18	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO ₃)	M19-Ja23288	NCP	mg/L	46	46	<1	30%	Pass	
Carbonate Alkalinity (as CaCO ₃)	M19-Ja23288	NCP	mg/L	< 10	< 10	<1	30%	Pass	
Total Alkalinity (as CaCO ₃)	M19-Ja23288	NCP	mg/L	46	46	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium (filtered)	M19-Ja27387	NCP	mg/L	3.0	3.0	1.0	30%	Pass	
Arsenic (filtered)	M19-Ja27387	NCP	mg/L	0.004	0.004	<1	30%	Pass	
Cadmium (filtered)	M19-Ja27387	NCP	mg/L	0.0004	0.0006	48	30%	Fail	Q15
Chromium (filtered)	M19-Ja27387	NCP	mg/L	0.092	0.093	2.0	30%	Pass	
Copper (filtered)	M19-Ja27387	NCP	mg/L	2.3	2.3	1.0	30%	Pass	
Iron (filtered)	M19-Ja23283	NCP	mg/L	0.47	0.47	<1	30%	Pass	
Lead (filtered)	M19-Ja27387	NCP	mg/L	0.022	0.024	9.0	30%	Pass	
Mercury (filtered)	M19-Ja27387	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Nickel (filtered)	M19-Ja27387	NCP	mg/L	0.085	0.089	4.0	30%	Pass
Selenium (filtered)	M19-Ja27387	NCP	mg/L	0.004	0.004	<1	30%	Pass
Zinc (filtered)	M19-Ja27387	NCP	mg/L	1.1	1.2	2.0	30%	Pass
Duplicate								
Alkali Metals				Result 1	Result 2	RPD		
Calcium	M19-Ja23465	NCP	mg/L	85	73	<1	30%	Pass
Magnesium	M19-Ja23465	NCP	mg/L	130	140	<1	30%	Pass
Potassium	P19-Ja22819	NCP	mg/L	200	180	7.0	30%	Pass
Sodium	B19-Ja26194	NCP	mg/L	26	26	5.0	30%	Pass
Duplicate								
Hardness Set				Result 1	Result 2	RPD		
Hardness mg equivalent CaCO ₃ /L	B19-Ja26194	NCP	mg/L	66	68	n/a	30%	Pass

Comments

Report amended to read in rerun results for sample MW05






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)



General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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ANZ
FCM - Generic Chain of Custody Form

URGENT

AECOM

04A/N/EV/1-007-EM4

CONSULTANT: AECOM Australia Pty Ltd						ADDRESS/OFFICE: Melbourne		SAMPLER: BH	Destination Laboratory ALS	
PROJECT MANAGER (PM):						SITE: GJUPP EES		MOBILE:	PHONE:	
PROJECT NUMBER & TASK CODE: 60592634 Task 1						P.O. NO.:		EMAIL REPORT TO: [REDACTED]		
RESULTS REQUIRED (dmo) 3 days TAT								QUOTE NO.:		
FOR LABORATORY USE ONLY								ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)		
COOLER SEAL (circle appropriate) Intact: Yes No N/A										Notes: e.g. Highly contaminated sample e.g. "High PATE expected". Extra volume for QC or trace LORs etc.
SAMPLE TEMPERATURE: CHILLED: Yes No										
SAMPLE INFORMATION (note: S = Soil W=Water)										
CONTAINER INFORMATION										
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	IWRG621	IWRG621 equivalent	Chromium Suite (EA033)	HOLD
1	CPT1000_BH107_270219_0.3	S	27/02/2019		1 J, 1 B	X				
2	CPT1000_BH107_270219_0.5	S							X	
3	CPT1000_BH107_270219_1.0	S								X
4	CPT1000_BH107_270219_1.5	S								X
5	CPT1000_BH107_270219_2.0	S					X			
6	CPT1000_BH107_270219_2.5	S							X	
7	QC156_270219	S					X			
8	QC256_270219	S					X			
9	QC357_270219	W						X		
10	QC457_270219	W							X	
11	QC565_270219	W						X		
RELINQUISHED BY: Name: [Signature] Date: 27/02/2019										
RECEIVED BY: Name: [Signature] Date: 28/2 Time: 2:45										
Name: Anthony Herbert Date: 27/02/2019 Of: [Signature] Date: 27-2 Received by: [Signature] Date: 27-2 Con' Note No: Transport Co:										
METHOD OF SHIPMENT										
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Ca Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airtight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Spatulation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solis; B = Unpreserved Bag Soil Container Codes: Jar = Unpreserved glass jar										

43079

COC Page of

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**

Contact name: [REDACTED]

Project name: **GIJPP EES**

Project ID: **60592634 TASK 1**

COC number: **Not provided**

Turn around time: **3 Day**

Date/Time received: **Feb 28, 2019 2:45 PM**

Eurofins | mgt reference: **643079**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 2 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : 03 8564 5933 or by e.mail: [REDACTED]

Results will be delivered electronically via e.mail to [REDACTED]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Attention:

Report 643079-S
Project name GIJPP EES
Project ID 60592634 TASK 1
Received Date Feb 28, 2019

Client Sample ID			QC256_270219
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ma00009
Date Sampled			Feb 27, 2019
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
Volatile Organics			
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Volatile Organics			
1,1-Dichloroethane	0.5	mg/kg	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5

Client Sample ID			QC256_270219
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ma00009
Date Sampled			Feb 27, 2019
Test/Reference	LOR	Unit	
Volatile Organics			
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	75
Toluene-d8 (surr.)	1	%	62
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			QC256_270219
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ma00009
Date Sampled			Feb 27, 2019
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	92
p-Terphenyl-d14 (surr.)	1	%	113
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorodate (surr.)	1	%	94
Tetrachloro-m-xylene (surr.)	1	%	101
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1

Client Sample ID			QC256_270219
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ma00009
Date Sampled			Feb 27, 2019
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls			
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchloredate (surr.)	1	%	94
Tetrachloro-m-xylene (surr.)	1	%	101
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	98
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride	100	mg/kg	440
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.6
% Moisture	1	%	26
Heavy Metals			
Arsenic	2	mg/kg	2.2
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	47
Copper	5	mg/kg	< 5
Lead	5	mg/kg	8.5
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	10
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	6.2

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Mar 01, 2019	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Mar 01, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Mar 01, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Mar 01, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Mar 01, 2019	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Mar 04, 2019	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Mar 01, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Mar 01, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008
Project Name: GIJPP EES
Project ID: 60592634 TASK 1

Order No.:
Report #: 643079
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Feb 28, 2019 2:45 PM
Due: Mar 5, 2019
Priority: 3 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IW/RG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	QC256_270219	Feb 27, 2019		Soil	M19-Ma00009	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
1,2,4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1,1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1,1,1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,1,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,3,5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1,2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1,3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	102			70-130	Pass	
TRH C10-C14	%	125			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	95			70-130	Pass	
1.1.1-Trichloroethane	%	92			70-130	Pass	
1.2-Dichlorobenzene	%	120			70-130	Pass	
1.2-Dichloroethane	%	117			70-130	Pass	
Benzene	%	103			70-130	Pass	
Ethylbenzene	%	124			70-130	Pass	
m&p-Xylenes	%	109			70-130	Pass	
Toluene	%	106			70-130	Pass	
Trichloroethene	%	95			70-130	Pass	
Xylenes - Total	%	115			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	95			70-130	Pass	
TRH C6-C10	%	97			70-130	Pass	
TRH >C10-C16	%	124			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	111			70-130	Pass	
Acenaphthylene	%	110			70-130	Pass	
Anthracene	%	111			70-130	Pass	
Benz(a)anthracene	%	95			70-130	Pass	
Benzo(a)pyrene	%	110			70-130	Pass	
Benzo(b&j)fluoranthene	%	107			70-130	Pass	
Benzo(g,h,i)perylene	%	113			70-130	Pass	
Benzo(k)fluoranthene	%	113			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Dibenz(a,h)anthracene	%	120			70-130	Pass	
Fluoranthene	%	110			70-130	Pass	
Fluorene	%	112			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	108			70-130	Pass	
Naphthalene	%	105			70-130	Pass	
Phenanthrene	%	107			70-130	Pass	
Pyrene	%	111			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	86			70-130	Pass	
4,4'-DDD	%	113			70-130	Pass	
4,4'-DDE	%	96			70-130	Pass	
4,4'-DDT	%	80			70-130	Pass	
a-BHC	%	97			70-130	Pass	
Aldrin	%	101			70-130	Pass	
b-BHC	%	74			70-130	Pass	
d-BHC	%	80			70-130	Pass	
Dieldrin	%	96			70-130	Pass	
Endosulfan I	%	99			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	%	93			70-130	Pass	
Endosulfan sulphate	%	85			70-130	Pass	
Endrin	%	82			70-130	Pass	
Endrin aldehyde	%	86			70-130	Pass	
Endrin ketone	%	105			70-130	Pass	
g-BHC (Lindane)	%	93			70-130	Pass	
Heptachlor	%	79			70-130	Pass	
Heptachlor epoxide	%	94			70-130	Pass	
Hexachlorobenzene	%	108			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	106			30-130	Pass	
2,4-Dichlorophenol	%	108			30-130	Pass	
2,4,5-Trichlorophenol	%	108			30-130	Pass	
2,4,6-Trichlorophenol	%	111			30-130	Pass	
2,6-Dichlorophenol	%	114			30-130	Pass	
4-Chloro-3-methylphenol	%	99			30-130	Pass	
Pentachlorophenol	%	94			30-130	Pass	
Tetrachlorophenols - Total	%	113			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	%	94			30-130	Pass	
2-Methyl-4,6-dinitrophenol	%	104			30-130	Pass	
2-Methylphenol (o-Cresol)	%	81			30-130	Pass	
2-Nitrophenol	%	120			30-130	Pass	
2,4-Dimethylphenol	%	114			30-130	Pass	
2,4-Dinitrophenol	%	95			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	81			30-130	Pass	
4-Nitrophenol	%	107			30-130	Pass	
Dinoseb	%	110			30-130	Pass	
Phenol	%	92			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	108			70-130	Pass	
Cyanide (total)	%	108			70-130	Pass	
Fluoride	%	105			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	95			80-120	Pass	
Cadmium	%	98			80-120	Pass	
Chromium	%	94			80-120	Pass	
Copper	%	91			80-120	Pass	
Lead	%	97			80-120	Pass	
Mercury	%	99			75-125	Pass	
Molybdenum	%	91			80-120	Pass	
Nickel	%	88			80-120	Pass	
Selenium	%	84			80-120	Pass	
Silver	%	101			80-120	Pass	
Tin	%	108			80-120	Pass	
Zinc	%	89			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	M19-Fe38776	NCP	%	118		70-130	Pass	
TRH C10-C14	M19-Fe34398	NCP	%	100		70-130	Pass	
Spike - % Recovery								
Volatile Organics				Result 1				
1.1-Dichloroethene	M19-Fe38776	NCP	%	94		70-130	Pass	
1.1.1-Trichloroethane	M19-Fe38776	NCP	%	89		70-130	Pass	
1.2-Dichlorobenzene	M19-Fe38776	NCP	%	123		70-130	Pass	
1.2-Dichloroethane	M19-Fe38776	NCP	%	113		70-130	Pass	
Benzene	M19-Fe38776	NCP	%	101		70-130	Pass	
Ethylbenzene	M19-Fe38776	NCP	%	106		70-130	Pass	
m&p-Xylenes	M19-Fe38776	NCP	%	95		70-130	Pass	
o-Xylene	M19-Fe38776	NCP	%	107		70-130	Pass	
Toluene	M19-Fe38776	NCP	%	108		70-130	Pass	
Trichloroethene	M19-Fe38776	NCP	%	98		70-130	Pass	
Xylenes - Total	M19-Fe38776	NCP	%	99		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	M19-Fe38776	NCP	%	95		70-130	Pass	
TRH C6-C10	M19-Fe38776	NCP	%	119		70-130	Pass	
TRH >C10-C16	M19-Fe34398	NCP	%	93		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	M19-Fe34549	NCP	%	112		70-130	Pass	
Acenaphthylene	M19-Fe34549	NCP	%	108		70-130	Pass	
Anthracene	M19-Fe34549	NCP	%	114		70-130	Pass	
Benz(a)anthracene	M19-Fe34549	NCP	%	99		70-130	Pass	
Benzo(a)pyrene	M19-Fe34549	NCP	%	115		70-130	Pass	
Benzo(b&j)fluoranthene	M19-Fe34549	NCP	%	117		70-130	Pass	
Benzo(g,h,i)perylene	M19-Fe34549	NCP	%	110		70-130	Pass	
Benzo(k)fluoranthene	M19-Fe34549	NCP	%	115		70-130	Pass	
Chrysene	M19-Fe34549	NCP	%	104		70-130	Pass	
Dibenz(a,h)anthracene	M19-Fe34549	NCP	%	120		70-130	Pass	
Fluoranthene	M19-Fe34549	NCP	%	117		70-130	Pass	
Fluorene	M19-Fe34549	NCP	%	114		70-130	Pass	
Indeno(1,2,3-cd)pyrene	M19-Fe34549	NCP	%	115		70-130	Pass	
Naphthalene	M19-Fe34549	NCP	%	110		70-130	Pass	
Phenanthrene	M19-Fe34549	NCP	%	109		70-130	Pass	
Pyrene	M19-Fe34549	NCP	%	117		70-130	Pass	
Spike - % Recovery								
Organochlorine Pesticides				Result 1				
4,4'-DDD	M19-Fe33399	NCP	%	107		70-130	Pass	
4,4'-DDE	S19-Fe32973	NCP	%	107		70-130	Pass	
a-BHC	S19-Fe32973	NCP	%	100		70-130	Pass	
Aldrin	S19-Fe32973	NCP	%	98		70-130	Pass	
b-BHC	S19-Fe32973	NCP	%	78		70-130	Pass	
d-BHC	S19-Fe32973	NCP	%	83		70-130	Pass	
Dieldrin	S19-Fe32973	NCP	%	103		70-130	Pass	
Endosulfan I	S19-Fe32973	NCP	%	99		70-130	Pass	
Endosulfan II	S19-Fe32973	NCP	%	100		70-130	Pass	
Endosulfan sulphate	S19-Fe32973	NCP	%	91		70-130	Pass	
Endrin	S19-Fe32973	NCP	%	88		70-130	Pass	
Endrin aldehyde	S19-Fe32973	NCP	%	94		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	S19-Fe32973	NCP	%	95		70-130	Pass	
g-BHC (Lindane)	S19-Fe32973	NCP	%	96		70-130	Pass	
Heptachlor	S19-Fe32973	NCP	%	75		70-130	Pass	
Heptachlor epoxide	S19-Fe32973	NCP	%	103		70-130	Pass	
Hexachlorobenzene	S19-Fe32973	NCP	%	114		70-130	Pass	
Spike - % Recovery								
Polychlorinated Biphenyls				Result 1				
Aroclor-1016	M19-Fe32314	NCP	%	85		70-130	Pass	
Aroclor-1260	M19-Fe32314	NCP	%	88		70-130	Pass	
Spike - % Recovery								
Phenols (Halogenated)				Result 1				
2-Chlorophenol	M19-Fe34549	NCP	%	104		30-130	Pass	
2,4-Dichlorophenol	M19-Fe34549	NCP	%	88		30-130	Pass	
2,4,5-Trichlorophenol	M19-Fe34549	NCP	%	79		30-130	Pass	
2,4,6-Trichlorophenol	M19-Fe34549	NCP	%	93		30-130	Pass	
2,6-Dichlorophenol	M19-Fe34549	NCP	%	106		30-130	Pass	
4-Chloro-3-methylphenol	M19-Fe34549	NCP	%	80		30-130	Pass	
Pentachlorophenol	M19-Fe34549	NCP	%	46		30-130	Pass	
Tetrachlorophenols - Total	M19-Fe34549	NCP	%	85		30-130	Pass	
Spike - % Recovery								
Phenols (non-Halogenated)				Result 1				
2-Cyclohexyl-4,6-dinitrophenol	M19-Fe34549	NCP	%	85		30-130	Pass	
2-Methyl-4,6-dinitrophenol	M19-Fe34549	NCP	%	97		30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Fe34549	NCP	%	73		30-130	Pass	
2-Nitrophenol	M19-Fe34549	NCP	%	100		30-130	Pass	
2,4-Dimethylphenol	M19-Fe34549	NCP	%	38		30-130	Pass	
2,4-Dinitrophenol	M19-Fe33398	NCP	%	66		30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Fe34549	NCP	%	101		30-130	Pass	
4-Nitrophenol	M19-Fe34549	NCP	%	74		30-130	Pass	
Dinoseb	M19-Fe34549	NCP	%	92		30-130	Pass	
Phenol	M19-Fe34549	NCP	%	97		30-130	Pass	
Spike - % Recovery								
				Result 1				
Chromium (hexavalent)	M19-Fe37645	NCP	%	104		70-130	Pass	
Fluoride	M19-Ma00009	CP	%	104		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	M19-Fe36030	NCP	%	87		75-125	Pass	
Cadmium	M19-Fe36030	NCP	%	88		75-125	Pass	
Chromium	M19-Fe36030	NCP	%	90		75-125	Pass	
Copper	M19-Fe36030	NCP	%	81		75-125	Pass	
Lead	M19-Fe36030	NCP	%	97		75-125	Pass	
Mercury	M19-Fe36030	NCP	%	85		70-130	Pass	
Molybdenum	M19-Fe36030	NCP	%	98		75-125	Pass	
Nickel	M19-Fe36030	NCP	%	46		75-125	Fail	Q08
Selenium	M19-Fe36030	NCP	%	87		75-125	Pass	
Silver	M19-Fe36030	NCP	%	92		75-125	Pass	
Tin	M19-Fe36030	NCP	%	99		75-125	Pass	
Zinc	M19-Fe36030	NCP	%	82		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M19-Fe34559	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M19-Fe34547	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M19-Fe34547	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M19-Fe34547	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.2.4-Trichlorobenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M19-Fe34559	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	M19-Fe34559	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M19-Fe34559	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
Methylene Chloride	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
o-Xylene	M19-Fe34559	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Styrene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Toluene	M19-Fe34559	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
trans-1,2-Dichloroethene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1,3-Dichloropropene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Xylenes - Total	M19-Fe34559	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	M19-Fe34559	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M19-Fe34547	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	M19-Fe34547	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	M19-Fe34547	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M19-Fe38904	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Heptachlor	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M19-Fe38904	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M19-Fe38904	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M19-Fe38904	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M19-Fe38904	NCP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M19-Fe38904	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M19-Fe38904	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M19-Fe38904	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Cyanide (total)	M19-Fe38904	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Fluoride	M19-Fe38415	NCP	mg/kg	< 100	< 100	<1	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	M19-Ma01525	NCP	pH Units	9.0	9.1	pass	30%	Pass
% Moisture	M19-Ma00009	CP	%	26	26	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M19-Fe36030	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	M19-Fe36030	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M19-Fe36030	NCP	mg/kg	30	30	<1	30%	Pass
Copper	M19-Fe36030	NCP	mg/kg	38	38	1.0	30%	Pass
Lead	M19-Fe36030	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Mercury	M19-Fe36030	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M19-Fe36030	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M19-Fe36030	NCP	mg/kg	150	150	2.0	30%	Pass
Selenium	M19-Fe36030	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M19-Fe36030	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tin	M19-Fe36030	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M19-Fe36030	NCP	mg/kg	73	75	2.0	30%	Pass

Comments






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)

General Manager

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**

Contact name: [REDACTED]

Project name: **GIJPP EES**

Project ID: **60592634 TASK 1**

COC number: **Not provided**

Turn around time: **3 Day**

Date/Time received: **Feb 28, 2019 2:45 PM**

Eurofins | mgt reference: **643079**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 2 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : 03 8564 5933 or by e.mail: [REDACTED]

Results will be delivered electronically via e.mail to [REDACTED]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

Analysis rec'd 28/2/18 12:45 pm - ALS

ANZ
FCM - Generic Chain of Custody Form

URGENT

AECOM
Q4AN(EV)-007-FM1

CONSULTANT: AECOM Australia Pty Ltd		ADDRESS/OFFICE: Melbourne		SAMPLER: BH		Destination Laboratory	
PROJECT MANAGER (PM):		SITE: GLUPP EES		MOBILE:		ALS	
PROJECT NUMBER & TASK CODE: 60592634 Task 1		P.O. NO.:		EMAIL REPORT TO:			
RESULTS REQUIRED (Date): 3 days TAT		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY -				COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:			
COOLER SEAL (circle appropriate):							
Unleaded: Yes No N/A							
SAMPLE TEMPERATURE:							
CHILLED: Yes No							
SAMPLE INFORMATION (note: S = Soil, W = Water)				CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
1	CPT000_BH107_270219_0.3	S	27/02/2019		1 J, 1 B	X	IWRG621
2	CPT000_BH107_270219_0.5	S					IWRG621 equivalent
3	CPT000_BH107_270219_1.0	S				X	TPH(C6-C9)/BTEXN
4	CPT000_BH107_270219_1.5	S					Chromium Suite (EA033)
5	CPT000_BH107_270219_2.0	S				X	
6	CPT000_BH107_270219_2.5	S					
7	QC156_270219	S				X	
8	QC256_270219	S				X	
9	QC357_270219	W					
10	QC457_270219	W				X	
11	QC565_270219	W				X	
				HOLD			
				Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.			
				Triplicate please forward to Eurofins			
RELINQUISHED BY:				RECEIVED BY:			
Name: Anthony Herbert		Date: 27/02/2019		Name: [Signature]		Date: 27/2	
Time:				Time: 14:45		Time: 16:25	
METHOD OF SHIPMENT				Transport Co.:			

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag

Soil Container Codes: Jar = Unpreserved glass jar

Relinquished - Rec'd 28/2/18 1:30 pm

COC Page of

43579

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Attention:

Report 643079-S
Project name GIJPP EES
Project ID 60592634 TASK 1
Received Date Feb 28, 2019

Client Sample ID			QC256_270219
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ma00009
Date Sampled			Feb 27, 2019
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
Volatile Organics			
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5
Volatile Organics			
1,1-Dichloroethane	0.5	mg/kg	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5

Client Sample ID			QC256_270219
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ma00009
Date Sampled			Feb 27, 2019
Test/Reference	LOR	Unit	
Volatile Organics			
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	75
Toluene-d8 (surr.)	1	%	62
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			QC256_270219
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ma00009
Date Sampled			Feb 27, 2019
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	92
p-Terphenyl-d14 (surr.)	1	%	113
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchloroendate (surr.)	1	%	94
Tetrachloro-m-xylene (surr.)	1	%	101
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1

Client Sample ID			QC256_270219
Sample Matrix			Soil
Eurofins mgt Sample No.			M19-Ma00009
Date Sampled			Feb 27, 2019
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls			
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchloredate (surr.)	1	%	94
Tetrachloro-m-xylene (surr.)	1	%	101
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Phenol-d6 (surr.)	1	%	98
Chromium (hexavalent)	1	mg/kg	< 1
Cyanide (total)	5	mg/kg	< 5
Fluoride	100	mg/kg	440
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.6
% Moisture	1	%	26
Heavy Metals			
Arsenic	2	mg/kg	2.2
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	47
Copper	5	mg/kg	< 5
Lead	5	mg/kg	8.5
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	10
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	6.2

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Mar 01, 2019	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Mar 01, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Mar 01, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Mar 01, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Mar 01, 2019	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Mar 04, 2019	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Mar 01, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Mar 01, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Mar 01, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008
Project Name: GIJPP EES
Project ID: 60592634 TASK 1

Order No.:
Report #: 643079
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Feb 28, 2019 2:45 PM
Due: Mar 5, 2019
Priority: 3 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IW/RG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	QC256_270219	Feb 27, 2019		Soil	M19-Ma00009	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
1,2,4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1,1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1,1,1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,1,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,3,5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1,2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1,3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	102			70-130	Pass	
TRH C10-C14	%	125			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	95			70-130	Pass	
1.1.1-Trichloroethane	%	92			70-130	Pass	
1.2-Dichlorobenzene	%	120			70-130	Pass	
1.2-Dichloroethane	%	117			70-130	Pass	
Benzene	%	103			70-130	Pass	
Ethylbenzene	%	124			70-130	Pass	
m&p-Xylenes	%	109			70-130	Pass	
Toluene	%	106			70-130	Pass	
Trichloroethene	%	95			70-130	Pass	
Xylenes - Total	%	115			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	95			70-130	Pass	
TRH C6-C10	%	97			70-130	Pass	
TRH >C10-C16	%	124			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	111			70-130	Pass	
Acenaphthylene	%	110			70-130	Pass	
Anthracene	%	111			70-130	Pass	
Benz(a)anthracene	%	95			70-130	Pass	
Benzo(a)pyrene	%	110			70-130	Pass	
Benzo(b&j)fluoranthene	%	107			70-130	Pass	
Benzo(g,h,i)perylene	%	113			70-130	Pass	
Benzo(k)fluoranthene	%	113			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Dibenz(a,h)anthracene	%	120			70-130	Pass	
Fluoranthene	%	110			70-130	Pass	
Fluorene	%	112			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	108			70-130	Pass	
Naphthalene	%	105			70-130	Pass	
Phenanthrene	%	107			70-130	Pass	
Pyrene	%	111			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	86			70-130	Pass	
4,4'-DDD	%	113			70-130	Pass	
4,4'-DDE	%	96			70-130	Pass	
4,4'-DDT	%	80			70-130	Pass	
a-BHC	%	97			70-130	Pass	
Aldrin	%	101			70-130	Pass	
b-BHC	%	74			70-130	Pass	
d-BHC	%	80			70-130	Pass	
Dieldrin	%	96			70-130	Pass	
Endosulfan I	%	99			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	%	93			70-130	Pass	
Endosulfan sulphate	%	85			70-130	Pass	
Endrin	%	82			70-130	Pass	
Endrin aldehyde	%	86			70-130	Pass	
Endrin ketone	%	105			70-130	Pass	
g-BHC (Lindane)	%	93			70-130	Pass	
Heptachlor	%	79			70-130	Pass	
Heptachlor epoxide	%	94			70-130	Pass	
Hexachlorobenzene	%	108			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	106			30-130	Pass	
2,4-Dichlorophenol	%	108			30-130	Pass	
2,4,5-Trichlorophenol	%	108			30-130	Pass	
2,4,6-Trichlorophenol	%	111			30-130	Pass	
2,6-Dichlorophenol	%	114			30-130	Pass	
4-Chloro-3-methylphenol	%	99			30-130	Pass	
Pentachlorophenol	%	94			30-130	Pass	
Tetrachlorophenols - Total	%	113			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	%	94			30-130	Pass	
2-Methyl-4,6-dinitrophenol	%	104			30-130	Pass	
2-Methylphenol (o-Cresol)	%	81			30-130	Pass	
2-Nitrophenol	%	120			30-130	Pass	
2,4-Dimethylphenol	%	114			30-130	Pass	
2,4-Dinitrophenol	%	95			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	81			30-130	Pass	
4-Nitrophenol	%	107			30-130	Pass	
Dinoseb	%	110			30-130	Pass	
Phenol	%	92			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	108			70-130	Pass	
Cyanide (total)	%	108			70-130	Pass	
Fluoride	%	105			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	95			80-120	Pass	
Cadmium	%	98			80-120	Pass	
Chromium	%	94			80-120	Pass	
Copper	%	91			80-120	Pass	
Lead	%	97			80-120	Pass	
Mercury	%	99			75-125	Pass	
Molybdenum	%	91			80-120	Pass	
Nickel	%	88			80-120	Pass	
Selenium	%	84			80-120	Pass	
Silver	%	101			80-120	Pass	
Tin	%	108			80-120	Pass	
Zinc	%	89			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	M19-Fe38776	NCP	%	118		70-130	Pass	
TRH C10-C14	M19-Fe34398	NCP	%	100		70-130	Pass	
Spike - % Recovery								
Volatile Organics				Result 1				
1.1-Dichloroethene	M19-Fe38776	NCP	%	94		70-130	Pass	
1.1.1-Trichloroethane	M19-Fe38776	NCP	%	89		70-130	Pass	
1.2-Dichlorobenzene	M19-Fe38776	NCP	%	123		70-130	Pass	
1.2-Dichloroethane	M19-Fe38776	NCP	%	113		70-130	Pass	
Benzene	M19-Fe38776	NCP	%	101		70-130	Pass	
Ethylbenzene	M19-Fe38776	NCP	%	106		70-130	Pass	
m&p-Xylenes	M19-Fe38776	NCP	%	95		70-130	Pass	
o-Xylene	M19-Fe38776	NCP	%	107		70-130	Pass	
Toluene	M19-Fe38776	NCP	%	108		70-130	Pass	
Trichloroethene	M19-Fe38776	NCP	%	98		70-130	Pass	
Xylenes - Total	M19-Fe38776	NCP	%	99		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	M19-Fe38776	NCP	%	95		70-130	Pass	
TRH C6-C10	M19-Fe38776	NCP	%	119		70-130	Pass	
TRH >C10-C16	M19-Fe34398	NCP	%	93		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	M19-Fe34549	NCP	%	112		70-130	Pass	
Acenaphthylene	M19-Fe34549	NCP	%	108		70-130	Pass	
Anthracene	M19-Fe34549	NCP	%	114		70-130	Pass	
Benz(a)anthracene	M19-Fe34549	NCP	%	99		70-130	Pass	
Benzo(a)pyrene	M19-Fe34549	NCP	%	115		70-130	Pass	
Benzo(b&j)fluoranthene	M19-Fe34549	NCP	%	117		70-130	Pass	
Benzo(g,h,i)perylene	M19-Fe34549	NCP	%	110		70-130	Pass	
Benzo(k)fluoranthene	M19-Fe34549	NCP	%	115		70-130	Pass	
Chrysene	M19-Fe34549	NCP	%	104		70-130	Pass	
Dibenz(a,h)anthracene	M19-Fe34549	NCP	%	120		70-130	Pass	
Fluoranthene	M19-Fe34549	NCP	%	117		70-130	Pass	
Fluorene	M19-Fe34549	NCP	%	114		70-130	Pass	
Indeno(1,2,3-cd)pyrene	M19-Fe34549	NCP	%	115		70-130	Pass	
Naphthalene	M19-Fe34549	NCP	%	110		70-130	Pass	
Phenanthrene	M19-Fe34549	NCP	%	109		70-130	Pass	
Pyrene	M19-Fe34549	NCP	%	117		70-130	Pass	
Spike - % Recovery								
Organochlorine Pesticides				Result 1				
4,4'-DDD	M19-Fe33399	NCP	%	107		70-130	Pass	
4,4'-DDE	S19-Fe32973	NCP	%	107		70-130	Pass	
a-BHC	S19-Fe32973	NCP	%	100		70-130	Pass	
Aldrin	S19-Fe32973	NCP	%	98		70-130	Pass	
b-BHC	S19-Fe32973	NCP	%	78		70-130	Pass	
d-BHC	S19-Fe32973	NCP	%	83		70-130	Pass	
Dieldrin	S19-Fe32973	NCP	%	103		70-130	Pass	
Endosulfan I	S19-Fe32973	NCP	%	99		70-130	Pass	
Endosulfan II	S19-Fe32973	NCP	%	100		70-130	Pass	
Endosulfan sulphate	S19-Fe32973	NCP	%	91		70-130	Pass	
Endrin	S19-Fe32973	NCP	%	88		70-130	Pass	
Endrin aldehyde	S19-Fe32973	NCP	%	94		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	S19-Fe32973	NCP	%	95		70-130	Pass	
g-BHC (Lindane)	S19-Fe32973	NCP	%	96		70-130	Pass	
Heptachlor	S19-Fe32973	NCP	%	75		70-130	Pass	
Heptachlor epoxide	S19-Fe32973	NCP	%	103		70-130	Pass	
Hexachlorobenzene	S19-Fe32973	NCP	%	114		70-130	Pass	
Spike - % Recovery								
Polychlorinated Biphenyls				Result 1				
Aroclor-1016	M19-Fe32314	NCP	%	85		70-130	Pass	
Aroclor-1260	M19-Fe32314	NCP	%	88		70-130	Pass	
Spike - % Recovery								
Phenols (Halogenated)				Result 1				
2-Chlorophenol	M19-Fe34549	NCP	%	104		30-130	Pass	
2,4-Dichlorophenol	M19-Fe34549	NCP	%	88		30-130	Pass	
2,4,5-Trichlorophenol	M19-Fe34549	NCP	%	79		30-130	Pass	
2,4,6-Trichlorophenol	M19-Fe34549	NCP	%	93		30-130	Pass	
2,6-Dichlorophenol	M19-Fe34549	NCP	%	106		30-130	Pass	
4-Chloro-3-methylphenol	M19-Fe34549	NCP	%	80		30-130	Pass	
Pentachlorophenol	M19-Fe34549	NCP	%	46		30-130	Pass	
Tetrachlorophenols - Total	M19-Fe34549	NCP	%	85		30-130	Pass	
Spike - % Recovery								
Phenols (non-Halogenated)				Result 1				
2-Cyclohexyl-4,6-dinitrophenol	M19-Fe34549	NCP	%	85		30-130	Pass	
2-Methyl-4,6-dinitrophenol	M19-Fe34549	NCP	%	97		30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Fe34549	NCP	%	73		30-130	Pass	
2-Nitrophenol	M19-Fe34549	NCP	%	100		30-130	Pass	
2,4-Dimethylphenol	M19-Fe34549	NCP	%	38		30-130	Pass	
2,4-Dinitrophenol	M19-Fe33398	NCP	%	66		30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Fe34549	NCP	%	101		30-130	Pass	
4-Nitrophenol	M19-Fe34549	NCP	%	74		30-130	Pass	
Dinoseb	M19-Fe34549	NCP	%	92		30-130	Pass	
Phenol	M19-Fe34549	NCP	%	97		30-130	Pass	
Spike - % Recovery								
				Result 1				
Chromium (hexavalent)	M19-Fe37645	NCP	%	104		70-130	Pass	
Fluoride	M19-Ma00009	CP	%	104		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	M19-Fe36030	NCP	%	87		75-125	Pass	
Cadmium	M19-Fe36030	NCP	%	88		75-125	Pass	
Chromium	M19-Fe36030	NCP	%	90		75-125	Pass	
Copper	M19-Fe36030	NCP	%	81		75-125	Pass	
Lead	M19-Fe36030	NCP	%	97		75-125	Pass	
Mercury	M19-Fe36030	NCP	%	85		70-130	Pass	
Molybdenum	M19-Fe36030	NCP	%	98		75-125	Pass	
Nickel	M19-Fe36030	NCP	%	46		75-125	Fail	Q08
Selenium	M19-Fe36030	NCP	%	87		75-125	Pass	
Silver	M19-Fe36030	NCP	%	92		75-125	Pass	
Tin	M19-Fe36030	NCP	%	99		75-125	Pass	
Zinc	M19-Fe36030	NCP	%	82		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M19-Fe34559	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M19-Fe34547	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M19-Fe34547	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M19-Fe34547	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.2.4-Trichlorobenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	M19-Fe34559	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	M19-Fe34559	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	M19-Fe34559	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
Methylene Chloride	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
o-Xylene	M19-Fe34559	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Styrene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Toluene	M19-Fe34559	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
trans-1,2-Dichloroethene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1,3-Dichloropropene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Xylenes - Total	M19-Fe34559	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M19-Fe34559	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	M19-Fe34559	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M19-Fe34547	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	M19-Fe34547	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	M19-Fe34547	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M19-Fe38904	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Heptachlor	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M19-Fe38904	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M19-Fe38904	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M19-Fe38904	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M19-Fe38904	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M19-Fe38904	NCP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M19-Fe38904	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M19-Fe38904	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M19-Fe38904	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M19-Fe38904	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M19-Fe38904	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Cyanide (total)	M19-Fe38904	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Fluoride	M19-Fe38415	NCP	mg/kg	< 100	< 100	<1	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	M19-Ma01525	NCP	pH Units	9.0	9.1	pass	30%	Pass
% Moisture	M19-Ma00009	CP	%	26	26	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M19-Fe36030	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	M19-Fe36030	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M19-Fe36030	NCP	mg/kg	30	30	<1	30%	Pass
Copper	M19-Fe36030	NCP	mg/kg	38	38	1.0	30%	Pass
Lead	M19-Fe36030	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Mercury	M19-Fe36030	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M19-Fe36030	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M19-Fe36030	NCP	mg/kg	150	150	2.0	30%	Pass
Selenium	M19-Fe36030	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M19-Fe36030	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tin	M19-Fe36030	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M19-Fe36030	NCP	mg/kg	73	75	2.0	30%	Pass

Comments






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)

General Manager

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**

Contact name: [REDACTED]

Project ID: 66592634

COC number: Not provided

Turn around time: 3 Day

Date/Time received: Apr 29, 2019 1:00 PM

Eurofins | mgt reference: **652772**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : .4 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : 03 8564 5933 or by e.mail: [REDACTED]

Results will be delivered electronically via e.mail to Nazuha Rosli - [REDACTED]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

*Please forward to
Crofting with
samples *

#6

92com.com

Enviro Sample Vic

From: [REDACTED]@aecom.com>
Sent: Monday, 29 April 2019 4:36 PM
To: Enviro Sample Vic
Subject: RE: Eurofins | mgt Sample Receipt Advice - Report 652772 : Site 66592634

Hi,

Can you please change the TAT to 3 days? Thanks!

[REDACTED]
Senior Environmental Engineer
[REDACTED]
[REDACTED]

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117

aecom.com

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From: EnviroSampleVic@eurofins.com [<mailto:EnviroSampleVic@eurofins.com>]
Sent: Monday, 29 April 2019 4:29 PM
To: [REDACTED]
Subject: Eurofins | mgt Sample Receipt Advice - Report 652772 : Site 66592634

Dear Valued Client,

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | mgt Analytical Services Manager as soon as possible to make certain that they get changed.

[EnviroNote 1079 - PFAS Fingerprinting](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

Click [here](#) to report this email as spam.

ScannedByWebsenseForEurofins

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Project Name:
Project ID: 66592634

Order No.:
Report #: 652772
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Apr 29, 2019 1:00 PM
Due: May 2, 2019
Priority: 3 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IW/RG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	QC256-260419	Apr 26, 2019		Soil	M19-Ap38590	X	X
2	QC257-260419	Apr 26, 2019		Soil	M19-Ap38591	X	X
Test Counts						2	2

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report **652772-S**
Project name
Project ID 66592634
Received Date Apr 29, 2019

Client Sample ID			QC256-260419	QC257-260419
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			M19-Ap38590	M19-Ap38591
Date Sampled			Apr 26, 2019	Apr 26, 2019
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50
Volatile Organics				
1,2,4-Trichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
Hexachlorobutadiene	0.5	mg/kg	< 0.5	< 0.5
Volatile Organics				
1,1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5
1,1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
1,1,1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5
1,1,2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5
1,2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
1,2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5
1,2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
1,3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5	< 0.5
Benzene	0.1	mg/kg	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			QC256-260419	QC257-260419
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			M19-Ap38590	M19-Ap38591
Date Sampled			Apr 26, 2019	Apr 26, 2019
Test/Reference	LOR	Unit		
Volatile Organics				
Bromomethane	0.5	mg/kg	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5
cis-1,2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
cis-1,3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
Iodomethane	0.5	mg/kg	< 0.5	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5
Toluene	0.1	mg/kg	< 0.1	< 0.1
trans-1,2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5
trans-1,3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3
Total MAH*	0.5	mg/kg	< 0.5	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	< 0.5
4-Bromofluorobenzene (surr.)	1	%	101	80
Toluene-d8 (surr.)	1	%	94	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			QC256-260419	QC257-260419
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			M19-Ap38590	M19-Ap38591
Date Sampled			Apr 26, 2019	Apr 26, 2019
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	83	99
p-Terphenyl-d14 (surr.)	1	%	88	98
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	111	125
Tetrachloro-m-xylene (surr.)	1	%	109	127
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1

Client Sample ID			QC256-260419	QC257-260419
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			M19-Ap38590	M19-Ap38591
Date Sampled			Apr 26, 2019	Apr 26, 2019
Test/Reference	LOR	Unit		
Polychlorinated Biphenyls				
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchloredate (surr.)	1	%	111	125
Tetrachloro-m-xylene (surr.)	1	%	109	127
Phenols (Halogenated)				
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1	< 1
Total Halogenated Phenol*	1	mg/kg	< 1	< 1
Phenols (non-Halogenated)				
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20
Phenol-d6 (surr.)	1	%	71	95
Chromium (hexavalent)	1	mg/kg	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	< 5
Fluoride	100	mg/kg	460	160
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.6	6.4
% Moisture	1	%	27	21
Heavy Metals				
Arsenic	2	mg/kg	7.2	6.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	57	42
Copper	5	mg/kg	< 5	< 5
Lead	5	mg/kg	14	18
Mercury	0.1	mg/kg	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5
Nickel	5	mg/kg	14	5.3
Selenium	2	mg/kg	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10
Zinc	5	mg/kg	5.5	< 5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Vic EPA IWRG 621 (Solids)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Apr 29, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Apr 29, 2019	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Volatile Organics	Melbourne	Apr 29, 2019	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Apr 29, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Apr 29, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Apr 29, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Apr 29, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Apr 29, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Phenols (Halogenated)	Melbourne	Apr 29, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Apr 29, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Apr 29, 2019	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Apr 30, 2019	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride	Melbourne	Apr 30, 2019	28 Day
- Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Apr 29, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals IWRG 621 : Metals M12	Melbourne	Apr 29, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Apr 29, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Project Name:
Project ID: 66592634

Order No.:
Report #: 652772
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Apr 29, 2019 1:00 PM
Due: May 2, 2019
Priority: 3 Day
Contact Name: [REDACTED]

Eurofins | mgt Analytical Services Manager : [REDACTED]

Sample Detail						Moisture Set	Vic EPA IW/RG 621 (Solids)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	QC256-260419	Apr 26, 2019		Soil	M19-Ap38590	X	X
2	QC257-260419	Apr 26, 2019		Soil	M19-Ap38591	X	X
Test Counts						2	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure, April 2011 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPa, PFHx, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Volatile Organics							
1,2,4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Volatile Organics							
1,1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1,1,1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,1,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1,2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1,2,4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1,3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1,3,5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1,4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1,2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1,3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	121			70-130	Pass	
TRH C10-C14	%	111			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	109			70-130	Pass	
1.1.1-Trichloroethane	%	114			70-130	Pass	
1.2-Dichlorobenzene	%	107			70-130	Pass	
1.2-Dichloroethane	%	110			70-130	Pass	
Benzene	%	114			70-130	Pass	
Ethylbenzene	%	107			70-130	Pass	
m&p-Xylenes	%	105			70-130	Pass	
Toluene	%	116			70-130	Pass	
Trichloroethene	%	108			70-130	Pass	
Xylenes - Total	%	105			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	118			70-130	Pass	
TRH C6-C10	%	122			70-130	Pass	
TRH >C10-C16	%	107			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	97			70-130	Pass	
Acenaphthylene	%	95			70-130	Pass	
Anthracene	%	95			70-130	Pass	
Benz(a)anthracene	%	90			70-130	Pass	
Benzo(a)pyrene	%	92			70-130	Pass	
Benzo(b&j)fluoranthene	%	91			70-130	Pass	
Benzo(g,h,i)perylene	%	99			70-130	Pass	
Benzo(k)fluoranthene	%	111			70-130	Pass	
Chrysene	%	106			70-130	Pass	
Dibenz(a,h)anthracene	%	89			70-130	Pass	
Fluoranthene	%	92			70-130	Pass	
Fluorene	%	96			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	80			70-130	Pass	
Naphthalene	%	98			70-130	Pass	
Phenanthrene	%	92			70-130	Pass	
Pyrene	%	97			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	100			70-130	Pass	
4,4'-DDD	%	107			70-130	Pass	
4,4'-DDE	%	110			70-130	Pass	
4,4'-DDT	%	76			70-130	Pass	
a-BHC	%	101			70-130	Pass	
Aldrin	%	105			70-130	Pass	
b-BHC	%	85			70-130	Pass	
d-BHC	%	96			70-130	Pass	
Dieldrin	%	104			70-130	Pass	
Endosulfan I	%	102			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	%	106			70-130	Pass	
Endosulfan sulphate	%	76			70-130	Pass	
Endrin	%	87			70-130	Pass	
Endrin aldehyde	%	72			70-130	Pass	
Endrin ketone	%	92			70-130	Pass	
g-BHC (Lindane)	%	110			70-130	Pass	
Heptachlor	%	86			70-130	Pass	
Heptachlor epoxide	%	95			70-130	Pass	
Hexachlorobenzene	%	112			70-130	Pass	
Methoxychlor	%	88			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	126			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	93			30-130	Pass	
2,4-Dichlorophenol	%	77			30-130	Pass	
2,4,5-Trichlorophenol	%	79			30-130	Pass	
2,4,6-Trichlorophenol	%	57			30-130	Pass	
2,6-Dichlorophenol	%	98			30-130	Pass	
4-Chloro-3-methylphenol	%	85			30-130	Pass	
Pentachlorophenol	%	44			30-130	Pass	
Tetrachlorophenols - Total	%	80			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	%	64			30-130	Pass	
2-Methyl-4,6-dinitrophenol	%	62			30-130	Pass	
2-Methylphenol (o-Cresol)	%	82			30-130	Pass	
2-Nitrophenol	%	86			30-130	Pass	
2,4-Dimethylphenol	%	72			30-130	Pass	
2,4-Dinitrophenol	%	73			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	110			30-130	Pass	
4-Nitrophenol	%	54			30-130	Pass	
Dinoseb	%	83			30-130	Pass	
Phenol	%	87			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	110			70-130	Pass	
Cyanide (total)	%	102			70-130	Pass	
Fluoride	%	89			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	91			80-120	Pass	
Cadmium	%	114			80-120	Pass	
Chromium	%	98			80-120	Pass	
Copper	%	96			80-120	Pass	
Lead	%	96			80-120	Pass	
Mercury	%	114			75-125	Pass	
Molybdenum	%	95			80-120	Pass	
Nickel	%	95			80-120	Pass	
Selenium	%	85			80-120	Pass	
Silver	%	114			80-120	Pass	
Tin	%	98			80-120	Pass	
Zinc	%	91			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	M19-Ap40260	NCP	%	93		70-130	Pass	
TRH C10-C14	M19-My00173	NCP	%	128		70-130	Pass	
Spike - % Recovery								
Volatile Organics				Result 1				
1.1-Dichloroethene	M19-Ap40260	NCP	%	87		70-130	Pass	
1.1.1-Trichloroethane	M19-Ap40260	NCP	%	71		70-130	Pass	
1.2-Dichlorobenzene	M19-Ap40260	NCP	%	93		70-130	Pass	
1.2-Dichloroethane	M19-Ap40260	NCP	%	75		70-130	Pass	
Benzene	M19-Ap40260	NCP	%	74		70-130	Pass	
Ethylbenzene	M19-Ap40260	NCP	%	71		70-130	Pass	
m&p-Xylenes	M19-Ap40260	NCP	%	76		70-130	Pass	
o-Xylene	M19-Ap40260	NCP	%	76		70-130	Pass	
Toluene	M19-Ap40260	NCP	%	72		70-130	Pass	
Trichloroethene	M19-Ap40260	NCP	%	79		70-130	Pass	
Xylenes - Total	M19-Ap40260	NCP	%	76		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	M19-Ap40260	NCP	%	118		70-130	Pass	
TRH C6-C10	M19-Ap40260	NCP	%	94		70-130	Pass	
TRH >C10-C16	M19-My00173	NCP	%	124		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	M19-Ap36484	NCP	%	88		70-130	Pass	
Acenaphthylene	M19-Ap36484	NCP	%	87		70-130	Pass	
Anthracene	M19-Ap36484	NCP	%	86		70-130	Pass	
Benz(a)anthracene	M19-Ap36484	NCP	%	82		70-130	Pass	
Benzo(a)pyrene	M19-Ap36484	NCP	%	89		70-130	Pass	
Benzo(b&j)fluoranthene	M19-Ap36484	NCP	%	77		70-130	Pass	
Benzo(g,h,i)perylene	M19-Ap36484	NCP	%	89		70-130	Pass	
Benzo(k)fluoranthene	M19-Ap36484	NCP	%	89		70-130	Pass	
Chrysene	M19-Ap36484	NCP	%	90		70-130	Pass	
Dibenz(a,h)anthracene	M19-Ap36484	NCP	%	83		70-130	Pass	
Fluoranthene	M19-Ap36484	NCP	%	83		70-130	Pass	
Fluorene	M19-Ap36484	NCP	%	88		70-130	Pass	
Indeno(1,2,3-cd)pyrene	M19-Ap36484	NCP	%	78		70-130	Pass	
Naphthalene	M19-Ap36484	NCP	%	86		70-130	Pass	
Phenanthrene	M19-Ap36484	NCP	%	83		70-130	Pass	
Pyrene	M19-Ap36484	NCP	%	84		70-130	Pass	
Spike - % Recovery								
Organochlorine Pesticides				Result 1				
Chlordanes - Total	S19-Ap35962	NCP	%	99		70-130	Pass	
4,4'-DDD	S19-Ap35962	NCP	%	77		70-130	Pass	
4,4'-DDE	S19-Ap35962	NCP	%	102		70-130	Pass	
4,4'-DDT	S19-Ap35962	NCP	%	93		70-130	Pass	
a-BHC	S19-Ap35962	NCP	%	91		70-130	Pass	
Aldrin	S19-Ap35962	NCP	%	98		70-130	Pass	
b-BHC	S19-Ap35962	NCP	%	78		70-130	Pass	
d-BHC	S19-Ap35962	NCP	%	83		70-130	Pass	
Dieldrin	S19-Ap35962	NCP	%	96		70-130	Pass	
Endosulfan I	S19-Ap35962	NCP	%	106		70-130	Pass	
Endosulfan II	S19-Ap35962	NCP	%	100		70-130	Pass	
Endosulfan sulphate	S19-Ap35962	NCP	%	81		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	S19-Ap35962	NCP	%	83			70-130	Pass	
Endrin aldehyde	S19-Ap35962	NCP	%	100			70-130	Pass	
Endrin ketone	S19-Ap35962	NCP	%	101			70-130	Pass	
g-BHC (Lindane)	S19-Ap35962	NCP	%	101			70-130	Pass	
Heptachlor	S19-Ap35962	NCP	%	79			70-130	Pass	
Heptachlor epoxide	S19-Ap35962	NCP	%	89			70-130	Pass	
Hexachlorobenzene	S19-Ap35962	NCP	%	103			70-130	Pass	
Methoxychlor	S19-Ap35962	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	M19-Ap39108	NCP	%	106			70-130	Pass	
Aroclor-1260	M19-Ap39108	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M19-Ap36484	NCP	%	82			30-130	Pass	
2,4-Dichlorophenol	M19-Ap36484	NCP	%	72			30-130	Pass	
2,4,5-Trichlorophenol	M19-Ap36484	NCP	%	76			30-130	Pass	
2,4,6-Trichlorophenol	M19-Ap36484	NCP	%	55			30-130	Pass	
2,6-Dichlorophenol	M19-Ap36484	NCP	%	87			30-130	Pass	
4-Chloro-3-methylphenol	M19-Ap36484	NCP	%	82			30-130	Pass	
Pentachlorophenol	M19-Ap36484	NCP	%	76			30-130	Pass	
Tetrachlorophenols - Total	M19-Ap36484	NCP	%	79			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4,6-dinitrophenol	M19-Ap36484	NCP	%	54			30-130	Pass	
2-Methyl-4,6-dinitrophenol	M19-Ap36484	NCP	%	90			30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Ap36484	NCP	%	74			30-130	Pass	
2-Nitrophenol	M19-Ap36484	NCP	%	82			30-130	Pass	
2,4-Dinitrophenol	M19-Ap36484	NCP	%	38			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Ap36484	NCP	%	98			30-130	Pass	
4-Nitrophenol	M19-Ap36484	NCP	%	100			30-130	Pass	
Dinoseb	M19-Ap36484	NCP	%	111			30-130	Pass	
Phenol	M19-Ap36484	NCP	%	83			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	B19-Ap39483	NCP	%	116			70-130	Pass	
Fluoride	M19-Ma43344	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S19-Ap38630	NCP	%	107			75-125	Pass	
Cadmium	S19-Ap38630	NCP	%	109			75-125	Pass	
Chromium	S19-Ap38630	NCP	%	101			75-125	Pass	
Copper	S19-Ap38630	NCP	%	107			75-125	Pass	
Lead	S19-Ap38630	NCP	%	109			75-125	Pass	
Mercury	S19-Ap38630	NCP	%	110			70-130	Pass	
Molybdenum	S19-Ap38630	NCP	%	113			75-125	Pass	
Nickel	S19-Ap38630	NCP	%	91			75-125	Pass	
Selenium	S19-Ap38630	NCP	%	102			75-125	Pass	
Silver	S19-Ap38630	NCP	%	108			75-125	Pass	
Tin	S19-Ap38630	NCP	%	112			75-125	Pass	
Zinc	S19-Ap38630	NCP	%	92			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S19-Ap37388	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M19-My00172	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M19-My00172	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M19-My00172	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.2.4-Trichlorobenzene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobutadiene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzene	S19-Ap37388	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Bromobenzene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	S19-Ap37388	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Iodomethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	S19-Ap37388	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
Methylene Chloride	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
o-Xylene	S19-Ap37388	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Styrene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Toluene	S19-Ap37388	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
trans-1,2-Dichloroethene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1,3-Dichloropropene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Xylenes - Total	S19-Ap37388	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S19-Ap37388	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S19-Ap37388	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M19-My00172	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	M19-My00172	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	M19-My00172	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M19-Ap39107	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M19-Ap39107	NCP	mg/kg	0.15	0.14	6.0	30%	Pass
b-BHC	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M19-Ap39107	NCP	mg/kg	0.11	0.09	26	30%	Pass
Endosulfan I	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Heptachlor	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M19-Ap39107	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M19-Ap39107	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M19-Ap39107	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M19-Ap39107	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M19-Ap39107	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M19-Ap39107	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M19-Ap39107	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M19-Ap39107	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M19-Ap39107	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	M19-Ap39107	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M19-Ap39107	NCP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M19-Ap39107	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M19-Ap39107	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M19-Ap39107	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M19-Ap39107	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	B19-Ap39479	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Cyanide (total)	M19-Ap35581	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Fluoride	M19-Ap38590	CP	mg/kg	460	480	3.0	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	M19-Ap38716	NCP	pH Units	5.0	5.1	pass	30%	Pass
% Moisture	M19-Ap38544	NCP	%	32	33	2.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S19-Ap38629	NCP	mg/kg	5.5	4.6	16	30%	Pass
Cadmium	S19-Ap38629	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Ap38629	NCP	mg/kg	82	74	10	30%	Pass
Copper	S19-Ap38629	NCP	mg/kg	43	43	1.0	30%	Pass
Lead	S19-Ap38629	NCP	mg/kg	31	33	5.0	30%	Pass
Mercury	S19-Ap38629	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	S19-Ap38629	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	S19-Ap38629	NCP	mg/kg	94	91	3.0	30%	Pass
Selenium	S19-Ap38629	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	S19-Ap38629	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tin	S19-Ap38629	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	S19-Ap38629	NCP	mg/kg	79	76	3.0	30%	Pass

Comments






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

	Analytical Services Manager
	Senior Analyst-Metal (VIC)
	Senior Analyst-Volatile (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)



General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**

Contact name: [REDACTED]

Project name: **CRIB POINT**

Project ID: **60592617**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Jul 23, 2019 2:31 PM**

Eurofins | mgt reference: **667275**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 7.7 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : 03 8564 5933 or by e.mail: [REDACTED]

Results will be delivered electronically via e.mail to [REDACTED]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report 667275-S
Project name CRIB POINT
Project ID 60592617
Received Date Jul 23, 2019

Client Sample ID			CPB2h_iii
Sample Matrix			Soil
Eurofins Sample No.			S19-JI32119
Date Sampled			Not Provided
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons (Trace level)			
Acenaphthene	0.005	mg/kg	< 0.005
Acenaphthylene	0.005	mg/kg	< 0.005
Anthracene	0.005	mg/kg	< 0.005
Benz(a)anthracene	0.005	mg/kg	< 0.005
Benzo(a)pyrene	0.005	mg/kg	< 0.005
Benzo(b&j)fluoranthene	0.005	mg/kg	< 0.005
Benzo(g,h,i)perylene	0.005	mg/kg	< 0.005
Benzo(k)fluoranthene	0.005	mg/kg	< 0.005
Chrysene	0.005	mg/kg	< 0.005
Dibenz(a,h)anthracene	0.005	mg/kg	< 0.005
Fluoranthene	0.005	mg/kg	< 0.005
Fluorene	0.005	mg/kg	< 0.005
Indeno(1.2.3-cd)pyrene	0.005	mg/kg	< 0.005
Naphthalene	0.005	mg/kg	< 0.005
Phenanthrene	0.005	mg/kg	< 0.005
Pyrene	0.005	mg/kg	< 0.005
Total PAH*	0.005	mg/kg	< 0.005
2-Fluorobiphenyl (surr.)	1	%	100
p-Terphenyl-d14 (surr.)	1	%	65
Total Organic Carbon	0.1	%	< 0.1
Tributyl Tin (as Sn)			see attached
Particle Size Distribution by Sieve and Hydrometer			see attached
Heavy Metals			
Antimony	10	mg/kg	< 10
Arsenic	2	mg/kg	13
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	9.2
Cobalt	5	mg/kg	< 5
Copper	5	mg/kg	< 5
Iron	20	mg/kg	7900
Lead	5	mg/kg	< 5
Manganese	5	mg/kg	36
Mercury (low-level)			0.00004
Nickel	5	mg/kg	< 5

Client Sample ID			CPB2h_iii
Sample Matrix			Soil
Eurofins Sample No.			S19-JI32119
Date Sampled			Not Provided
Test/Reference	LOR	Unit	
Heavy Metals			
Selenium	2	mg/kg	< 2
Silver	0.2	mg/kg	< 0.2
Vanadium	10	mg/kg	31
Zinc	5	mg/kg	8.4
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA) ^{N11}	5	ug/kg	< 5
Perfluoropentanoic acid (PFPeA) ^{N11}	5	ug/kg	< 5
Perfluorohexanoic acid (PFHxA) ^{N11}	5	ug/kg	< 5
Perfluoroheptanoic acid (PFHpA) ^{N11}	5	ug/kg	< 5
Perfluorooctanoic acid (PFOA) ^{N11}	5	ug/kg	< 5
Perfluorononanoic acid (PFNA) ^{N11}	5	ug/kg	< 5
Perfluorodecanoic acid (PFDA) ^{N11}	5	ug/kg	< 5
Perfluoroundecanoic acid (PFUnDA) ^{N11}	5	ug/kg	< 5
Perfluorododecanoic acid (PFDoDA) ^{N11}	5	ug/kg	< 5
Perfluorotridecanoic acid (PFTeDA) ^{N15}	5	ug/kg	< 5
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	5	ug/kg	< 5
13C4-PFBA (surr.)	1	%	69
13C5-PFPeA (surr.)	1	%	71
13C5-PFHxA (surr.)	1	%	87
13C4-PFHpA (surr.)	1	%	93
13C8-PFOA (surr.)	1	%	96
13C5-PFNA (surr.)	1	%	95
13C6-PFDA (surr.)	1	%	127
13C2-PFUnDA (surr.)	1	%	115
13C2-PFDoDA (surr.)	1	%	124
13C2-PFTeDA (surr.)	1	%	123
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA) ^{N11}	5	ug/kg	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	5	ug/kg	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	5	ug/kg	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) ^{N11}	5	ug/kg	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) ^{N11}	5	ug/kg	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	10	ug/kg	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	10	ug/kg	< 10
13C8-FOSA (surr.)	1	%	105
D3-N-MeFOSA (surr.)	1	%	100
D5-N-EtFOSA (surr.)	1	%	104
D7-N-MeFOSE (surr.)	1	%	122
D9-N-EtFOSE (surr.)	1	%	114
D5-N-EtFOSAA (surr.)	1	%	140
D3-N-MeFOSAA (surr.)	1	%	155
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS) ^{N11}	5	ug/kg	< 5
Perfluorononanesulfonic acid (PFNS) ^{N15}	5	ug/kg	< 5
Perfluoropropanesulfonic acid (PFPrS) ^{N15}	5	ug/kg	< 5
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	5	ug/kg	< 5

Client Sample ID			CPB2h_iii
Sample Matrix			Soil
Eurofins Sample No.			S19-JI32119
Date Sampled			Not Provided
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonic acids (PFASs)			
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	5	ug/kg	< 5
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	5	ug/kg	< 5
Perfluorooctanesulfonic acid (PFOS) ^{N11}	5	ug/kg	< 5
Perfluorodecanesulfonic acid (PFDS) ^{N15}	5	ug/kg	< 5
13C3-PFBS (surr.)	1	%	92
18O2-PFHxS (surr.)	1	%	111
13C8-PFOS (surr.)	1	%	115
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	5	ug/kg	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11}	10	ug/kg	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	5	ug/kg	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N15}	5	ug/kg	< 5
13C2-4:2 FTSA (surr.)	1	%	54
13C2-6:2 FTSA (surr.)	1	%	42
13C2-8:2 FTSA (surr.)	1	%	55
PFASs Summations			
Sum (PFHxS + PFOS)*	5	ug/kg	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons (Trace level) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Jul 25, 2019	0 Days
Total Organic Carbon - Method: LTM-INO-4060 Total Organic Carbon in water and soil	Melbourne	Jul 25, 2019	28 Days
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Jul 25, 2019	180 Days
Mercury (low-level) - Method:	Melbourne	Jul 30, 2019	0 Days
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jul 25, 2019	180 Days
Perfluoroalkyl sulfonamido substances - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jul 25, 2019	180 Days
Perfluoroalkyl sulfonic acids (PFSAAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jul 25, 2019	180 Days
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jul 25, 2019	180 Days

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	mg/kg	< 0.005			0.005	Pass	
Acenaphthylene	mg/kg	< 0.005			0.005	Pass	
Anthracene	mg/kg	< 0.005			0.005	Pass	
Benz(a)anthracene	mg/kg	< 0.005			0.005	Pass	
Benzo(a)pyrene	mg/kg	< 0.005			0.005	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.005			0.005	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.005			0.005	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.005			0.005	Pass	
Chrysene	mg/kg	< 0.005			0.005	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.005			0.005	Pass	
Fluoranthene	mg/kg	< 0.005			0.005	Pass	
Fluorene	mg/kg	< 0.005			0.005	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.005			0.005	Pass	
Naphthalene	mg/kg	< 0.005			0.005	Pass	
Phenanthrene	mg/kg	< 0.005			0.005	Pass	
Pyrene	mg/kg	< 0.005			0.005	Pass	
Total PAH*	mg/kg	< 0			0.005	Pass	
Method Blank							
Total Organic Carbon	%	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Antimony	mg/kg	< 10			10	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Iron	mg/kg	< 20			20	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury (low-level)		91				N/A	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 0.2			0.2	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCA's)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSA's)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	%	77			70-130	Pass	
Acenaphthylene	%	76			70-130	Pass	
Anthracene	%	71			70-130	Pass	
Benz(a)anthracene	%	86			70-130	Pass	
Benzo(a)pyrene	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	%	102			70-130	Pass	
Benzo(g,h,i)perylene	%	102			70-130	Pass	
Benzo(k)fluoranthene	%	119			70-130	Pass	
Chrysene	%	97			70-130	Pass	
Dibenz(a,h)anthracene	%	86			70-130	Pass	
Fluoranthene	%	77			70-130	Pass	
Fluorene	%	74			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	79			70-130	Pass	
Naphthalene	%	82			70-130	Pass	
Phenanthrene	%	74			70-130	Pass	
Pyrene	%	76			70-130	Pass	
LCS - % Recovery							
Total Organic Carbon	%	100			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Antimony	%	107			80-120	Pass	
Arsenic	%	112			80-120	Pass	
Cadmium	%	103			80-120	Pass	
Chromium	%	110			80-120	Pass	
Cobalt	%	112			80-120	Pass	
Copper	%	105			80-120	Pass	
Lead	%	115			80-120	Pass	
Manganese	%	115			80-120	Pass	

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Nickel			%	99		80-120	Pass	
Selenium			%	98		80-120	Pass	
Silver			%	102		80-120	Pass	
Vanadium			%	109		80-120	Pass	
Zinc			%	104		80-120	Pass	
LCS - % Recovery								
Perfluoroalkyl carboxylic acids (PFCAs)								
Perfluorobutanoic acid (PFBA)			%	101		50-150	Pass	
Perfluoropentanoic acid (PFPeA)			%	103		50-150	Pass	
Perfluorohexanoic acid (PFHxA)			%	86		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)			%	100		50-150	Pass	
Perfluorooctanoic acid (PFOA)			%	94		50-150	Pass	
Perfluorononanoic acid (PFNA)			%	104		50-150	Pass	
Perfluorodecanoic acid (PFDA)			%	102		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)			%	90		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)			%	114		50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)			%	96		50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)			%	96		50-150	Pass	
LCS - % Recovery								
Perfluoroalkyl sulfonamido substances								
Perfluorooctane sulfonamide (FOSA)			%	96		50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)			%	91		50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)			%	93		50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)			%	117		50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)			%	103		50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)			%	130		50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)			%	85		50-150	Pass	
LCS - % Recovery								
Perfluoroalkyl sulfonic acids (PFSAs)								
Perfluorobutanesulfonic acid (PFBS)			%	79		50-150	Pass	
Perfluorononanesulfonic acid (PFNS)			%	81		50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)			%	95		50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)			%	88		50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)			%	90		50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)			%	86		50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)			%	99		50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)			%	80		50-150	Pass	
LCS - % Recovery								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)								
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)			%	108		50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)			%	75		50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)			%	138		50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)			%	118		50-150	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Antimony	S19-JI33369	NCP	%	119		70-130	Pass	
Arsenic	S19-JI33369	NCP	%	107		75-125	Pass	
Cadmium	S19-JI33369	NCP	%	107		75-125	Pass	
Chromium	S19-JI33369	NCP	%	111		75-125	Pass	
Cobalt	S19-JI33369	NCP	%	107		75-125	Pass	
Copper	S19-JI33369	NCP	%	108		75-125	Pass	
Lead	S19-JI33369	NCP	%	114		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese	S19-JI33369	NCP	%	197			75-125	Fail	Q08
Nickel	S19-JI33369	NCP	%	101			75-125	Pass	
Selenium	S19-JI33369	NCP	%	93			75-125	Pass	
Silver	S19-JI33369	NCP	%	105			75-125	Pass	
Vanadium	S19-JI33369	NCP	%	117			75-125	Pass	
Zinc	S19-JI33369	NCP	%	107			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S19-JI34922	NCP	%	97			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S19-JI34922	NCP	%	146			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S19-JI34922	NCP	%	89			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S19-JI34922	NCP	%	95			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S19-JI34922	NCP	%	100			50-150	Pass	
Perfluorononanoic acid (PFNA)	S19-JI34922	NCP	%	102			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S19-JI34922	NCP	%	93			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S19-JI34922	NCP	%	93			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S19-JI34922	NCP	%	101			50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	S19-JI34922	NCP	%	88			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S19-JI34922	NCP	%	98			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S19-JI34922	NCP	%	84			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S19-JI34922	NCP	%	79			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S19-JI34922	NCP	%	94			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S19-JI34922	NCP	%	96			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S19-JI34922	NCP	%	91			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S19-JI34922	NCP	%	115			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S19-JI34922	NCP	%	85			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSA's)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S19-JI34922	NCP	%	90			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S19-JI34922	NCP	%	93			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S19-JI34922	NCP	%	108			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S19-JI34922	NCP	%	111			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S19-JI34922	NCP	%	81			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S19-JI34922	NCP	%	91			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S19-JI34922	NCP	%	95			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S19-JI34922	NCP	%	83			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S19-JI34922	NCP	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S19-JI34922	NCP	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S19-JI34922	NCP	%	143			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S19-JI34922	NCP	%	110			50-150	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1	Result 2	RPD			
Acenaphthene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Acenaphthylene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Anthracene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Benz(a)anthracene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Benzo(a)pyrene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Benzo(b&j)fluoranthene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Benzo(g,h,i)perylene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Benzo(k)fluoranthene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Chrysene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Dibenz(a,h)anthracene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Fluoranthene	M19-JI39654	NCP	mg/kg	0.32	0.26	20	30%	Pass	
Fluorene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Naphthalene	M19-JI39654	NCP	mg/kg	< 0.005	< 0.005	<1	30%	Pass	
Phenanthrene	M19-JI39654	NCP	mg/kg	0.33	0.23	34	30%	Fail	Q15
Pyrene	M19-JI39654	NCP	mg/kg	0.53	0.42	22	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Organic Carbon	S19-JI32119	CP	%	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Antimony	S19-JI33368	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	S19-JI33368	NCP	mg/kg	9.2	8.5	10	30%	Pass	
Cadmium	S19-JI33368	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S19-JI33368	NCP	mg/kg	21	17	17	30%	Pass	
Cobalt	S19-JI33368	NCP	mg/kg	16	18	10	30%	Pass	
Copper	S19-JI33368	NCP	mg/kg	23	24	3.0	30%	Pass	
Iron	S19-JI33368	NCP	mg/kg	44000	36000	18	30%	Pass	
Lead	S19-JI33368	NCP	mg/kg	45	38	18	30%	Pass	
Manganese	S19-JI33368	NCP	mg/kg	790	810	2.0	30%	Pass	
Nickel	S19-JI33368	NCP	mg/kg	10	11	3.0	30%	Pass	
Selenium	S19-JI33368	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	S19-JI33368	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Vanadium	S19-JI33368	NCP	mg/kg	47	45	5.0	30%	Pass	
Zinc	S19-JI33368	NCP	mg/kg	48	45	7.0	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorooctanoic acid (PFOA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S19-JI34921	NCP	ug/kg	< 10	< 10	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S19-JI34921	NCP	ug/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFSA's)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S19-JI34921	NCP	ug/kg	< 5		<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S19-JI34921	NCP	ug/kg	< 5		<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S19-JI34921	NCP	ug/kg	< 5		<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S19-JI34921	NCP	ug/kg	< 5		<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S19-JI34921	NCP	ug/kg	< 5		<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S19-JI34921	NCP	ug/kg	< 10	< 10	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S19-JI34921	NCP	ug/kg	< 5	< 5	<1	30%	Pass

Comments






Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

	Analytical Services Manager
	Senior Analyst-PFAS (QLD)
	Senior Analyst-Metal (VIC)
	Senior Analyst-Organic (VIC)
	Senior Analyst-Inorganic (VIC)



General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



Particle Size Distribution

- USDA sieves

Sample Drop Off: 16 Chilvers Road
Thornleigh NSW 2120

Mailing Address: PO Box 357
Pennant Hills NSW 1715

Tel: 1300 30 40 80
Fax: 1300 64 46 89

Em: info@sesl.com.au
Web: www.sesl.com.au

Batch N°: 53658

Sample N°: 1

Date Received: 25/7/19

Report Status: Final

Client Name: Eurofins - Melbourne

Project Name: REF: 667275

SESL Quote N°:

Client Contact: Eurofins Report

Sample Name: CPB2h_iii/S19-JI32119

Client Order N°: 19-295-667275

Description: Soil

Address: PO Box 276
Oakleigh VIC 3166

Test Type: PSA_US

SUMMARY

Analysed by SESL Australia Pty Ltd, NATA # 15633

Results only requested.

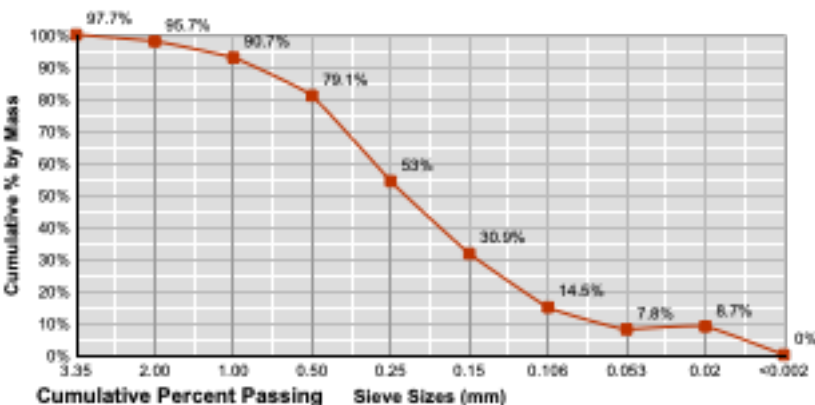
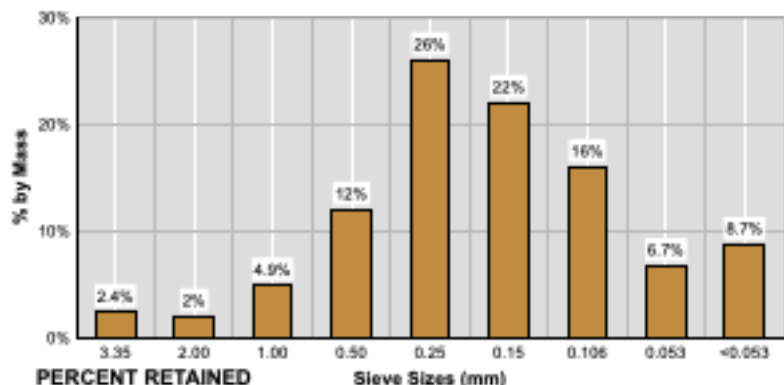
D VALUES

D ₉₅ :	1.86
D ₉₀ :	0.969
D ₈₅ :	0.754
D ₆₀ :	0.317
D ₅₀ :	0.236
D ₃₅ :	0.168
D ₂₅ :	0.134
D ₁₅ :	0.107
D ₁₀ :	0.071
D ₅ :	0.002

PERFORMANCE FACTORS

Gradation Index (D ₉₀ /D ₁₀):	14.00
Coefficient of Uniformity: (D ₆₀ /D ₁₀)	4.50

PARTICLE SIZE DISTRIBUTION GRAPH



PARTICLE SIZE ANALYSIS

Sieve (mm)	Fraction	% Retained by mass	% Passing by mass
3.35	Medium gravel	2.4	97.65
2.00	Fine gravel	2	95.68
1.00	Very coarse sand	4.9	90.73
0.50	Coarse sand	12	79.07
0.25	Medium sand	26	53.02
0.15	Fine sand	22	30.94
0.106	Fine sand	16	14.49
0.053	Very fine sand	6.7	7.77

Fine Particles (Hydrometer calculated)

0.02	Silt	<0.01	8.69
0.002	Fine Silt	2.7	5.95
<0.002	Clay	6.0	N/A

Consultant:

Authorised Signatory:

Date Report Generated
1/08/2019

DISCLAIMER OF ENDORSEMENT:

The use of trade, firm or company names in this report is for the information and convenience of the reader. Such use does not necessarily constitute or imply an official endorsement or approval by SESL of any product or service to the exclusion of others that may be suitable. This report shall not be used for advertising or product endorsement purposes.

Tests are performed under a quality system certified as complying with ISO 9001: 2008. Results and conclusions assume that sampling is representative. This document shall not be reproduced except in full.

Method Reference: SESL PM 0001 : Particle Size Analysis



Australian Government
National Measurement Institute

QUALITY ASSURANCE REPORT

Client: EUROFINS MGT

NMI QA Report No: EURO26/190724

Sample Matrix: Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample ng/g	Duplicate ng/g	RPD %	LCS %	Matrix Spike %
Organics Section								
Organotin								
Monobutyltin	NR_35	0.5	<0.5	NA	NA	NA	138	NA
Dibutyltin	NR_35	0.5	<0.5	NA	NA	NA	112	NA
Tributyltin	NR_35	0.5	<0.5	NA	NA	NA	106	NA
Organotin Surrogate								
Tripropyltin (%Rec)	NR_35	-	-	NA	NA	NA	95	NA

Results expressed in percentage (%) or ng/g wherever appropriate.

Acceptable Spike recovery is 30-150% (monobutyltin and Tripropyltin); 40-160% (dibutyltin and tributyltin)

Maximum acceptable RPDs on spikes and duplicates is 60%.

'NA ' = Not Applicable.

RPD= Relative Percentage Difference, LCS = Laboratory Control Spike, LOR = Limit of Reporting.

This report shall not be reproduced except in full.

Signed:

Date:

Organics Manager, NMI-North Ryde
2/08/2019

				pH KCL	TAA mole H+/t
1	EM1819563	11	CPT_MW10_031218_0.5	4.3	57
2	EM1819563	14	CPT_MW10_031218_3.0	6	4
3	EM1900336	2	CPT_MW17_110119_0.5	4.4	48
4	EM1900336	4	CPT_MW17_110119_2.0	5.2	17
5	EM1820551	7	CPT_MW18_041218_0.2	4.4	69
6	EM1820551	8	CPT_MW18_041218_2.0	4.7	24
7	EM1900529	2	CPT000_BH07_160119_0.5	4.7	27
8	EM1900529	3	CPT000_BH07_160119_1.0	5.3	15
9	EM1900402	2	CPT029_BH10_140119_0.4	4.8	40
10	EM1900402	3	CPT029_BH10_140119_0.9	6.2	7
11	EM1900682	8	CPT067_BH24_170119_0.5	6	<2
12	EM1900682	11	CPT067_BH24_170119_2.0	5.2	12
13	EM1900641	3	CPT091_BH34_180119_1.0	4.9	20
14	EM1900641	5	CPT091_BH34_180119_2.0	5.3	15
15	EM1900908	19	CPT082_BH202_230119_0.5	5.9	4
16	EM1900908	21	CPT082_BH202_230119_1.5	5.3	13
17	EM1900752	44	CPT084_BH205_210119_0.5	5.9	3
18	EM1900752	46	CPT084_BH205_210119_1.5	5.6	5
19	EM1900753	32	CPT084_BH209_210119_0.5	4.8	34
20	EM1900753	35	CPT084_BH209_210119_2.0	5.4	9
21	EM1900977	26	CPT092_BH224_240119_0.5	4.7	16
22	EM1900977	28	CPT092_BH224_240119_1.5	5	18

Environmental Division
Brisbane

Work Order Reference

EB1903126



Telephone : - 61-7-3243 7222

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EB1903126**

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [REDACTED]	E-mail	: [REDACTED]@alsglobal.com
Telephone	: ----	Telephone	: +61 7 3552 8639
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: ----	Page	: 1 of 4
Order number	: ----	Quote number	: EB2017AECOMAU0014 (EN/004/16)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ----		

Dates

Date Samples Received	: 07-Feb-2019 15:27	Issue Date	: 07-Feb-2019
Client Requested Due Date	: 08-Feb-2019	Scheduled Reporting Date	: 08-Feb-2019

Delivery Details

Mode of Delivery	: Samples On Hand	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	: REBATCH	No. of samples received / analysed	: 22 / 22

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **This work order was created to rebatch samples from EM1819563, EM1900336, EM1820551, EM1900529, EM1900402, EM1900682, EM1900641, EM1900908, EM1900752, EM1900753 and EM1900977.**
- **A 10% surcharge applies for results returned within 3 days.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

☐ **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EB1903126-001 : [03-Dec-2018] : CPT_MW10__031218_0.5
EB1903126-007 : 16-Jan-2019 08:15 : CPT000_BH07_160119_0.5
EB1903126-008 : 16-Jan-2019 08:20 : CPT000_BH07_160119_1.0
EB1903126-009 : [14-Jan-2019] : CPT029_BH10_140119_0.4
EB1903126-010 : [14-Jan-2019] : CPT029_BH10_140119_0.9
EB1903126-011 : 17-Jan-2019 09:45 : CPT067_BH24_170119_0.5
EB1903126-012 : 17-Jan-2019 10:05 : CPT067_BH24_170119_2.0
EB1903126-013 : 18-Jan-2019 09:25 : CPT091_BH34_180119_1.0
EB1903126-014 : 18-Jan-2019 09:35 : CPT091_BH34_180119_2.0
EB1903126-015 : [23-Jan-2019] : CPT082_BH202_230119_0.5
EB1903126-016 : [23-Jan-2019] : CPT082_BH202_230119_1.5
EB1903126-017 : [21-Jan-2019] : CPT084_BH205_210119_0.5
EB1903126-018 : [21-Jan-2019] : CPT084_BH205_210119_1.5
EB1903126-019 : [21-Jan-2019] : CPT084_BH209_210119_0.5
EB1903126-020 : [21-Jan-2019] : CPT084_BH209_210119_2.0
EB1903126-021 : 24-Jan-2019 12:35 : CPT092_BH224_240119_0.5
EB1903126-022 : 24-Jan-2019 12:45 : CPT092_BH224_240119_1.5

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA033 Chromium Suite for Acid Sulphate Soils
EB1903126-001	03-Dec-2018 00:00	CPT_MW10__031218_0.5	☐
EB1903126-002	03-Dec-2018 00:00	CPT_MW10__031218_3.0	☐
EB1903126-003	11-Jan-2019 09:45	CPT_MW17_110119_0.5	☐
EB1903126-004	11-Jan-2019 09:55	CPT_MW17_110119_2.0	☐
EB1903126-005	04-Dec-2018 00:00	CPT_MW18_041218_0.2	☐
EB1903126-006	04-Dec-2018 00:00	CPT_MW18_041218_2.0	☐
EB1903126-007	16-Jan-2019 08:15	CPT000_BH07_160119_0...	☐
EB1903126-008	16-Jan-2019 08:20	CPT000_BH07_160119_1...	☐
EB1903126-009	14-Jan-2019 00:00	CPT029_BH10_140119_0...	☐
EB1903126-010	14-Jan-2019 00:00	CPT029_BH10_140119_0...	☐
EB1903126-011	17-Jan-2019 09:45	CPT067_BH24_170119_0...	☐
EB1903126-012	17-Jan-2019 10:05	CPT067_BH24_170119_2...	☐
EB1903126-013	18-Jan-2019 09:25	CPT091_BH34_180119_1...	☐
EB1903126-014	18-Jan-2019 09:35	CPT091_BH34_180119_2...	☐
EB1903126-015	23-Jan-2019 00:00	CPT082_BH202_230119_...	☐
EB1903126-016	23-Jan-2019 00:00	CPT082_BH202_230119_...	☐
EB1903126-017	21-Jan-2019 00:00	CPT084_BH205_210119_...	☐
EB1903126-018	21-Jan-2019 00:00	CPT084_BH205_210119_...	☐
EB1903126-019	21-Jan-2019 00:00	CPT084_BH209_210119_...	☐
EB1903126-020	21-Jan-2019 00:00	CPT084_BH209_210119_...	☐



			SOIL - EA033 Chromium Suite for Acid Sulphate Soils
EB1903126-021	24-Jan-2019 12:35	CPT092_BH224_240119_...	☐
EB1903126-022	24-Jan-2019 12:45	CPT092_BH224_240119_...	☐

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.



Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com
- Chain of Custody (CoC) (COC)	Email	AP_CustomerService.ANZ@aecom.com
[REDACTED]		
- *AU Certificate of Analysis - NATA (COA)	Email	[REDACTED]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	[REDACTED]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	[REDACTED]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	[REDACTED]
- Chain of Custody (CoC) (COC)	Email	[REDACTED]
- EDI Format - ENMRG (ENMRG)	Email	[REDACTED]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	[REDACTED]
- EDI Format - ESDAT (ESDAT)	Email	[REDACTED]
- EDI Format - XTab (XTAB)	Email	[REDACTED]
- Electronic SRN for EQUIS (ESRN_EQUIS)	Email	[REDACTED]
[REDACTED]		
- *AU Certificate of Analysis - NATA (COA)	Email	[REDACTED]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	[REDACTED]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	[REDACTED]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	[REDACTED]
- Chain of Custody (CoC) (COC)	Email	[REDACTED]
- EDI Format - ENMRG (ENMRG)	Email	[REDACTED]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	[REDACTED]
- EDI Format - ESDAT (ESDAT)	Email	[REDACTED]
- EDI Format - XTab (XTAB)	Email	[REDACTED]
- Electronic SRN for EQUIS (ESRN_EQUIS)	Email	[REDACTED]
[REDACTED]		
- *AU Certificate of Analysis - NATA (COA)	Email	[REDACTED]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	[REDACTED]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	[REDACTED]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	[REDACTED]
- Chain of Custody (CoC) (COC)	Email	[REDACTED]
- EDI Format - ENMRG (ENMRG)	Email	[REDACTED]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	[REDACTED]
- EDI Format - ESDAT (ESDAT)	Email	[REDACTED]
- EDI Format - XTab (XTAB)	Email	[REDACTED]
- Electronic SRN for EQUIS (ESRN_EQUIS)	Email	[REDACTED]
[REDACTED]		
- *AU Certificate of Analysis - NATA (COA)	Email	[REDACTED]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	[REDACTED]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	[REDACTED]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	[REDACTED]
- Chain of Custody (CoC) (COC)	Email	[REDACTED]
- EDI Format - ENMRG (ENMRG)	Email	[REDACTED]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	[REDACTED]
- EDI Format - ESDAT (ESDAT)	Email	[REDACTED]
- EDI Format - XTab (XTAB)	Email	[REDACTED]
- Electronic SRN for EQUIS (ESRN_EQUIS)	Email	[REDACTED]

CERTIFICATE OF ANALYSIS

Work Order : **EB1903126**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : ----
Order number : ----
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : EN/004/16
No. of samples received : 22
No. of samples analysed : 22

Page : 1 of 7
Laboratory : Environmental Division Brisbane
Contact : [REDACTED]
Address : 2 Byth Street Stafford QLD Australia 4053

Telephone : +61 7 3552 8639
Date Samples Received : 07-Feb-2019 15:27
Date Analysis Commenced : 08-Feb-2019
Issue Date : 08-Feb-2019 16:37



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
[REDACTED]	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD



□□□ □ □□□ □□□□

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

∅ = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.



□ □ □ □ □ □ □ □ □ □

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT_MW10__031218_0.5	CPT_MW10_031218_3.0	CPT_MW17_110119_0.5	CPT_MW17_110119_2.0	CPT_MW18_041218_0.2
Client sampling date / time				03-Dec-2018 00:00	03-Dec-2018 00:00	11-Jan-2019 09:45	11-Jan-2019 09:55	04-Dec-2018 00:00
Compound	CAS Number	LOR	Unit	EB1903126-001	EB1903126-002	EB1903126-003	EB1903126-004	EB1903126-005
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	4.3	6.0	4.4	5.2	4.4
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	57	4	48	17	69
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.09	<0.02	0.08	0.03	0.11
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	0.013	0.028	0.010	0.008	0.019
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	18	<10	<10	12
EA033-D: Retained Acidity								
KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.02	----	<0.02	----	<0.02
HCl Extractable Sulfur (20Be)	----	0.02	% S	<0.02	----	<0.02	----	<0.02
Net Acid Soluble Sulfur (20Je)	----	0.02	% S	<0.02	----	<0.02	----	<0.02
acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	<10	----	<10	----	<10
sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	<0.02	----	<0.02	----	<0.02
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S	0.10	0.03	0.09	0.04	0.13
Net Acidity (acidity units)	----	10	mole H+ / t	65	22	55	22	81
Liming Rate	----	1	kg CaCO3/t	5	2	4	2	6
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.10	0.03	0.09	0.04	0.13
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	65	22	55	22	81
Liming Rate excluding ANC	----	1	kg CaCO3/t	5	2	4	2	6



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT_MW18_041218_2.0	CPT000_BH07_16011_9_0.5	CPT000_BH07_16011_9_1.0	CPT029_BH10_14011_9_0.4	CPT029_BH10_14011_9_0.9
Client sampling date / time				04-Dec-2018 00:00	16-Jan-2019 08:15	16-Jan-2019 08:20	14-Jan-2019 00:00	14-Jan-2019 00:00
Compound	CAS Number	LOR	Unit	EB1903126-006	EB1903126-007	EB1903126-008	EB1903126-009	EB1903126-010
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	4.7	4.7	5.3	4.8	6.2
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	24	27	15	40	7
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.04	0.04	0.02	0.06	<0.02
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	0.011	0.009	0.012	0.010	0.008
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	<10	<10	<10
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S	0.05	0.05	0.04	0.07	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	31	32	23	47	12
Liming Rate	----	1	kg CaCO3/t	2	2	2	3	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.05	0.05	0.04	0.07	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	31	32	23	47	12
Liming Rate excluding ANC	----	1	kg CaCO3/t	2	2	2	3	<1



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT067_BH24_17011 9_0.5	CPT067_BH24_17011 9_2.0	CPT091_BH34_18011 9_1.0	CPT091_BH34_18011 9_2.0	CPT082_BH202_2301 19_0.5
Client sampling date / time				17-Jan-2019 09:45	17-Jan-2019 10:05	18-Jan-2019 09:25	18-Jan-2019 09:35	23-Jan-2019 00:00
Compound	CAS Number	LOR	Unit	EB1903126-011	EB1903126-012	EB1903126-013	EB1903126-014	EB1903126-015
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	6.0	5.2	4.9	5.3	5.9
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	<2	12	20	15	4
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.03	0.02	<0.02
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	0.008	0.008	0.010	0.008	0.005
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	<10	<10	<10
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S	<0.02	0.03	0.04	0.03	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	<10	17	26	20	<10
Liming Rate	----	1	kg CaCO3/t	<1	1	2	1	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	0.03	0.04	0.03	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	17	26	20	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	1	2	1	<1



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT082_BH202_2301 19_1.5	CPT084_BH205_2101 19_0.5	CPT084_BH205_2101 19_1.5	CPT084_BH209_2101 19_0.5	CPT084_BH209_2101 19_2.0
Client sampling date / time				23-Jan-2019 00:00	21-Jan-2019 00:00	21-Jan-2019 00:00	21-Jan-2019 00:00	21-Jan-2019 00:00
Compound	CAS Number	LOR	Unit	EB1903126-016	EB1903126-017	EB1903126-018	EB1903126-019	EB1903126-020
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	5.3	5.9	5.6	4.8	5.4
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	13	3	5	34	9
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.02	<0.02	<0.02	0.05	<0.02
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	0.007	0.010	0.009	0.013	0.006
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	<10	<10	<10
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S	0.03	<0.02	<0.02	0.07	0.02
Net Acidity (acidity units)	----	10	mole H+ / t	17	<10	10	42	13
Liming Rate	----	1	kg CaCO3/t	1	<1	<1	3	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.03	<0.02	<0.02	0.07	0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	17	<10	10	42	13
Liming Rate excluding ANC	----	1	kg CaCO3/t	1	<1	<1	3	<1



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT092_BH224_2401 19_0.5	CPT092_BH224_2401 19_1.5	----	----	----
Client sampling date / time				24-Jan-2019 12:35	24-Jan-2019 12:45	----	----	----
Compound	CAS Number	LOR	Unit	EB1903126-021	EB1903126-022	-----	-----	-----
				Result	Result	----	----	----
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	4.7	5.0	----	----	----
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	16	18	----	----	----
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.02	0.03	----	----	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	0.008	0.008	----	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	----	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	0.03	0.04	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	21	23	----	----	----
Liming Rate	----	1	kg CaCO3/t	2	2	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.03	0.04	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	21	23	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	2	2	----	----	----

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EB1903126**

Page : 1 of 6

Client : **AECOM Australia Pty Ltd**

Contact : [REDACTED]

Project : ----

Site : ----

Sampler : ----

Order number : ----

Laboratory : Environmental Division Brisbane

Telephone : +61 7 3552 8639

Date Samples Received : 07-Feb-2019

Issue Date : 08-Feb-2019

No. of samples received : 22

No. of samples analysed : 22

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA033-A: Actual Acidity								
Pulp Bag (EA033) CPT_MW10__031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	08-Feb-2019	03-Dec-2019	✔	08-Feb-2019	09-May-2019	✔
Pulp Bag (EA033) CPT_MW18_041218_0.2,	CPT_MW18_041218_2.0	04-Dec-2018	08-Feb-2019	04-Dec-2019	✔	08-Feb-2019	09-May-2019	✔
Pulp Bag (EA033) CPT_MW17_110119_0.5,	CPT_MW17_110119_2.0	11-Jan-2019	08-Feb-2019	11-Jan-2020	✔	08-Feb-2019	09-May-2019	✔
Pulp Bag (EA033) CPT029_BH10_140119_0.4,	CPT029_BH10_140119_0.9	14-Jan-2019	08-Feb-2019	14-Jan-2020	✔	08-Feb-2019	09-May-2019	✔
Pulp Bag (EA033) CPT000_BH07_160119_0.5,	CPT000_BH07_160119_1.0	16-Jan-2019	08-Feb-2019	16-Jan-2020	✔	08-Feb-2019	09-May-2019	✔
Pulp Bag (EA033) CPT067_BH24_170119_0.5,	CPT067_BH24_170119_2.0	17-Jan-2019	08-Feb-2019	17-Jan-2020	✔	08-Feb-2019	09-May-2019	✔
Pulp Bag (EA033) CPT091_BH34_180119_1.0,	CPT091_BH34_180119_2.0	18-Jan-2019	08-Feb-2019	18-Jan-2020	✔	08-Feb-2019	09-May-2019	✔
Pulp Bag (EA033) CPT084_BH205_210119_0.5, CPT084_BH209_210119_0.5,	CPT084_BH205_210119_1.5, CPT084_BH209_210119_2.0	21-Jan-2019	08-Feb-2019	21-Jan-2020	✔	08-Feb-2019	09-May-2019	✔
Pulp Bag (EA033) CPT082_BH202_230119_0.5,	CPT082_BH202_230119_1.5	23-Jan-2019	08-Feb-2019	23-Jan-2020	✔	08-Feb-2019	09-May-2019	✔
Pulp Bag (EA033) CPT092_BH224_240119_0.5,	CPT092_BH224_240119_1.5	24-Jan-2019	08-Feb-2019	24-Jan-2020	✔	08-Feb-2019	09-May-2019	✔



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method			Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted		Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA033-B: Potential Acidity									
Pulp Bag (EA033) CPT_MW10__031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	08-Feb-2019	03-Dec-2019	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT_MW18_041218_0.2,	CPT_MW18_041218_2.0	04-Dec-2018	08-Feb-2019	04-Dec-2019	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT_MW17_110119_0.5,	CPT_MW17_110119_2.0	11-Jan-2019	08-Feb-2019	11-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT029_BH10_140119_0.4,	CPT029_BH10_140119_0.9	14-Jan-2019	08-Feb-2019	14-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT000_BH07_160119_0.5,	CPT000_BH07_160119_1.0	16-Jan-2019	08-Feb-2019	16-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT067_BH24_170119_0.5,	CPT067_BH24_170119_2.0	17-Jan-2019	08-Feb-2019	17-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT091_BH34_180119_1.0,	CPT091_BH34_180119_2.0	18-Jan-2019	08-Feb-2019	18-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT084_BH205_210119_0.5, CPT084_BH209_210119_0.5,	CPT084_BH205_210119_1.5, CPT084_BH209_210119_2.0	21-Jan-2019	08-Feb-2019	21-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT082_BH202_230119_0.5,	CPT082_BH202_230119_1.5	23-Jan-2019	08-Feb-2019	23-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT092_BH224_240119_0.5,	CPT092_BH224_240119_1.5	24-Jan-2019	08-Feb-2019	24-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
EA033-C: Acid Neutralising Capacity									
Pulp Bag (EA033) CPT_MW10__031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	08-Feb-2019	03-Dec-2019	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT_MW18_041218_0.2,	CPT_MW18_041218_2.0	04-Dec-2018	08-Feb-2019	04-Dec-2019	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT_MW17_110119_0.5,	CPT_MW17_110119_2.0	11-Jan-2019	08-Feb-2019	11-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT029_BH10_140119_0.4,	CPT029_BH10_140119_0.9	14-Jan-2019	08-Feb-2019	14-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT000_BH07_160119_0.5,	CPT000_BH07_160119_1.0	16-Jan-2019	08-Feb-2019	16-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT067_BH24_170119_0.5,	CPT067_BH24_170119_2.0	17-Jan-2019	08-Feb-2019	17-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT091_BH34_180119_1.0,	CPT091_BH34_180119_2.0	18-Jan-2019	08-Feb-2019	18-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT084_BH205_210119_0.5, CPT084_BH209_210119_0.5,	CPT084_BH205_210119_1.5, CPT084_BH209_210119_2.0	21-Jan-2019	08-Feb-2019	21-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT082_BH202_230119_0.5,	CPT082_BH202_230119_1.5	23-Jan-2019	08-Feb-2019	23-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	
Pulp Bag (EA033) CPT092_BH224_240119_0.5,	CPT092_BH224_240119_1.5	24-Jan-2019	08-Feb-2019	24-Jan-2020	✓	08-Feb-2019	09-May-2019	✓	



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-D: Retained Acidity								
Pulp Bag (EA033) CPT_MW10__031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	08-Feb-2019	03-Dec-2019	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT_MW18_041218_0.2,	CPT_MW18_041218_2.0	04-Dec-2018	08-Feb-2019	04-Dec-2019	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT_MW17_110119_0.5,	CPT_MW17_110119_2.0	11-Jan-2019	08-Feb-2019	11-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT029_BH10_140119_0.4,	CPT029_BH10_140119_0.9	14-Jan-2019	08-Feb-2019	14-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT000_BH07_160119_0.5,	CPT000_BH07_160119_1.0	16-Jan-2019	08-Feb-2019	16-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT067_BH24_170119_0.5,	CPT067_BH24_170119_2.0	17-Jan-2019	08-Feb-2019	17-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT091_BH34_180119_1.0,	CPT091_BH34_180119_2.0	18-Jan-2019	08-Feb-2019	18-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT084_BH205_210119_0.5, CPT084_BH209_210119_0.5,	CPT084_BH205_210119_1.5, CPT084_BH209_210119_2.0	21-Jan-2019	08-Feb-2019	21-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT082_BH202_230119_0.5,	CPT082_BH202_230119_1.5	23-Jan-2019	08-Feb-2019	23-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT092_BH224_240119_0.5,	CPT092_BH224_240119_1.5	24-Jan-2019	08-Feb-2019	24-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
EA033-E: Acid Base Accounting								
Pulp Bag (EA033) CPT_MW10__031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	08-Feb-2019	03-Dec-2019	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT_MW18_041218_0.2,	CPT_MW18_041218_2.0	04-Dec-2018	08-Feb-2019	04-Dec-2019	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT_MW17_110119_0.5,	CPT_MW17_110119_2.0	11-Jan-2019	08-Feb-2019	11-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT029_BH10_140119_0.4,	CPT029_BH10_140119_0.9	14-Jan-2019	08-Feb-2019	14-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT000_BH07_160119_0.5,	CPT000_BH07_160119_1.0	16-Jan-2019	08-Feb-2019	16-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT067_BH24_170119_0.5,	CPT067_BH24_170119_2.0	17-Jan-2019	08-Feb-2019	17-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT091_BH34_180119_1.0,	CPT091_BH34_180119_2.0	18-Jan-2019	08-Feb-2019	18-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT084_BH205_210119_0.5, CPT084_BH209_210119_0.5,	CPT084_BH205_210119_1.5, CPT084_BH209_210119_2.0	21-Jan-2019	08-Feb-2019	21-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT082_BH202_230119_0.5,	CPT082_BH202_230119_1.5	23-Jan-2019	08-Feb-2019	23-Jan-2020	✓	08-Feb-2019	09-May-2019	✓
Pulp Bag (EA033) CPT092_BH224_240119_0.5,	CPT092_BH224_240119_1.5	24-Jan-2019	08-Feb-2019	24-Jan-2020	✓	08-Feb-2019	09-May-2019	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Chromium Suite for Acid Sulphate Soils	EA033	3	22	13.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chromium Suite for Acid Sulphate Soils	EA033	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chromium Suite for Acid Sulphate Soils	EA033	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Chromium Suite for Acid Sulphate Soils	EA033	SOIL	In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.

Preparation Methods	Method	Matrix	Method Descriptions
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house

QUALITY CONTROL REPORT

Work Order	: EB1903126	Page	: 1 of 4
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8639
Project	: ----	Date Samples Received	: 07-Feb-2019
Order number	: ----	Date Analysis Commenced	: 08-Feb-2019
C-O-C number	: ----	Issue Date	: 08-Feb-2019
Sampler	: ----		
Site	: ----		
Quote number	: EN/004/16		
No. of samples received	: 22		
No. of samples analysed	: 22		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]

Senior Acid Sulfate Soil Chemist

Brisbane Acid Sulphate Soils, Stafford, QLD

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA033-A: Actual Acidity (QC Lot: 2175101)									
EB1903126-001	CPT_MW10__031218_0.5	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.09	0.09	0.00	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	57	57	0.00	0% - 20%
		EA033: pH KCl (23A)	----	0.1	pH Unit	4.3	4.3	0.00	0% - 20%
EB1903126-011	CPT067_BH24_170119_0.5	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.00	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	0.00	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	6.0	6.0	0.00	0% - 20%
EA033-A: Actual Acidity (QC Lot: 2175102)									
EB1903126-021	CPT092_BH224_240119_0.5	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.02	0.02	0.00	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	16	16	0.00	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	4.7	4.7	0.00	0% - 20%
EA033-B: Potential Acidity (QC Lot: 2175101)									
EB1903126-001	CPT_MW10__031218_0.5	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.013	0.011	13.3	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EB1903126-011	CPT067_BH24_170119_0.5	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.008	0.009	14.6	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA033-B: Potential Acidity (QC Lot: 2175102)									
EB1903126-021	CPT092_BH224_240119_0.5	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.008	0.009	0.00	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA033-D: Retained Acidity (QC Lot: 2175101)									

Page : 3 of 4
 Work Order : EB1903126
 Client : AECOM Australia Pty Ltd
 Project : ----



Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA033-D: Retained Acidity (QC Lot: 2175101) - continued									
EB1903126-001	CPT_MW10__031218_0.5	EA033: sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	<0.02	<0.02	0.00	No Limit
		EA033: Net Acid Soluble Sulfur (20Je)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA033: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA033: HCl Extractable Sulfur (20Be)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA033: acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	<10	<10	0.00	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result			LCS	Low
EA033-A: Actual Acidity (QCLot: 2175101)								
EA033: pH KCl (23A)	----	----	pH Unit	----	4.5 pH Unit	97.8	70	130
EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	24.6 mole H+ / t	93.6	70	130
EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033-A: Actual Acidity (QCLot: 2175102)								
EA033: pH KCl (23A)	----	----	pH Unit	----	4.5 pH Unit	97.8	70	130
EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	24.6 mole H+ / t	93.6	70	130
EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033-B: Potential Acidity (QCLot: 2175101)								
EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	0.23483 % S	99.2	70	130
EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	----	----	----
EA033-B: Potential Acidity (QCLot: 2175102)								
EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	0.23483 % S	101	70	130
EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	----	----	----
EA033-D: Retained Acidity (QCLot: 2175101)								
EA033: Net Acid Soluble Sulfur (20Je)	----	0.02	% S	<0.02	----	----	----	----
EA033: acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	<10	----	----	----	----
EA033: sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.02	0.052 % S	98.5	70	130
EA033: HCl Extractable Sulfur (20Be)	----	0.02	% S	<0.02	0.027 % S	86.7	70	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

1/2

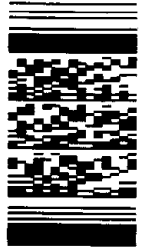
ANZ
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: S. Macauloch		Destination Laboratory	
PROJECT MANAGER (PM):		SITE: GUPP Groundwater Study		MOBILE:		PHONE:	
PROJECT NUMBER & TASK CO 60582811		P.O. NO.:		EMAIL REPORT TO:		ACLS	
RESULTS REQUIRED (Date):		QUOTE NO. EN/096/18		ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY:		Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for OC or trace LORs etc.					
COOLER SEAL (circle appropriate)							
Inch: Yes No N/A							
SAMPLE TEMPERATURE:							
CHILLED: Yes No							
SAMPLE INFORMATION (note: S = Soil, W = Water)							
ALS ID		SAMPLE ID	MATRIX	DATE	Time	CONTAINER INFORMATION	
						Type / Code	Total bottles
1	CPT-MW05-041218-02	S	4.12.18	0920		11B	X
2	CPT-MW05-041218-05	S		0925			
3	CPT-MW05-041218-10	S		0930			
4	CPT-MW05-041219-20	S		0840			
5	CPT-MW05-041218-30	S		0845			
6	CPT-MW05-041218-40	S		0910			
7	CPT-MW18-041219-02	S		1200			
8	CPT-MW18-041218-05	S		1205			
9	CPT-MW18-041218-10	S		1210			
10	CPT-MW18-041219-20	S		1215			
11	CPT-MW18-041218-30	S		1220			
12	CPT-MW18-041218-40	S		1235			
13	CPT-MW19-041218-02	S		1410			
14	CPT-MW19-041218-05	S		1415			
15	CPT-MW19-041219-10	S		1420			
16	CPT-MW19-041218-20	S		1425			
17	CPT-MW19-041218-30	S		1430			
18	CPT-MW19-041218-40	S		1435			
19	CPT-OC301-041219	W				209B	X

RELINQUISHED BY:		RECEIVED BY:		METHOD OF SHIPMENT:	
Name: S. Macauloch	Date: 4.12.18	Name: Tom	Date: 4.12.18	Con' Note No:	
Of: AECOM	Time: 1630	Of: AV	Time: 17:35	Transport Co:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Environmental Division
Melbourne
Work Order Reference
EM1819548



Telephone : + 61-3-9548 9800

please freeze bags for acid sulfate.

ANZ
FQM - Generic Chain of Custody Form

[illegible]

Use freeze bags for acid sulfate

From: [REDACTED]@aecom.com>
Sent: Thursday, 6 December 2018 9:42 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: ON HOLD - EM1819548 - AECOM 60582811 GIJPP Groundwater Study

Hi [REDACTED],

Sebastien noted that he took soil sample QC200_041218, however, forgot to include in the COC. Can you please kindly check whether the bottle was sent to lab?

Also, can you please change the following sample IDs?

- QC501_041218 to QC502_041218
- QC502_041218 to QC503_041218

For analysis, please analyse:

1 CPT_MW14_031218_0.2 = IWRG621
4 CPT_MW14_031218_1.0 = IWRG621
8 CPT_MW10_031218_0.2 = IWRG621
12 CPT_MW10_031218_2.5 = IWRG621
15 CPT_MW10_031218_0.5 = SPOCAS
16 CPT_MW10_031218_3.0 = SPOCAS
1 CPT_MW05_041218_0.2 = IWRG621
4 CPT_MW05_041218_2.0 = IWRG621
8 CPT_MW18_041218_0.5 = IWRG621
12 CPT_MW18_041218_4.0 = IWRG621
15 CPT_MW19_041218_0.2 = IWRG621
16 CPT_MW19_041218_2.0 = IWRG621
QC100_031218 = IWRG621
QC300_031218 = IWRG621 water equivalent
QC400_031218 = TPH(C6-C9)/BTEXN
QC500_031218 = TPH(C6-C9)/BTEXN
QC501_031218 = TPH(C6-C9)/BTEXN
19 QC301_041218 = IWRG621 water equivalent
20 QC401_041218 = TPH(C6-C9)/BTEXN
21 QC502_041218 = TPH(C6-C9)/BTEXN
22 QC503_041218 = TPH(C6-C9)/BTEXN
→ QC200_041218 = IWRG621 (Triplicate, please forward to Eurofins)

At standard TAT. Thanks.

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

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From: [REDACTED]
Sent: Wednesday, 5 December 2018 11:32 AM

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1819548**

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [REDACTED]	E-mail	: [REDACTED]@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60582811	Page	: 1 of 3
Order number	: ----	Quote number	: EP2016AECOMAU0014 (EN/096/18)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: GIJPP Groundwater Study		
Sampler	: SM		

Dates

Date Samples Received	: 04-Dec-2018 17:35	Issue Date	: 06-Dec-2018
Client Requested Due Date	: 13-Dec-2018	Scheduled Reporting Date	: 13-Dec-2018

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 4.4°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 22 / 10

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - P-16 IWRG 621
EM1819548-001	04-Dec-2018 08:20	CPT_MW05_041218_0.2		✓	✓
EM1819548-002	04-Dec-2018 08:25	CPT_MW05_041218_0.5	✓		
EM1819548-003	04-Dec-2018 08:30	CPT_MW05_041218_1.0	✓		
EM1819548-004	04-Dec-2018 08:40	CPT_MW05_041218_2.0		✓	✓
EM1819548-005	04-Dec-2018 08:45	CPT_MW05_041218_3.0	✓		
EM1819548-006	04-Dec-2018 08:50	CPT_MW05_041218_4.0	✓		
EM1819548-007	04-Dec-2018 12:00	CPT_MW18_041218_0.2	✓		
EM1819548-008	04-Dec-2018 12:05	CPT_MW18_041218_0.5		✓	✓
EM1819548-009	04-Dec-2018 12:10	CPT_MW18_041218_1.0	✓		
EM1819548-010	04-Dec-2018 12:15	CPT_MW18_041218_2.0	✓		
EM1819548-011	04-Dec-2018 12:20	CPT_MW18_041218_3.0	✓		
EM1819548-012	04-Dec-2018 12:25	CPT_MW18_041218_4.0		✓	✓
EM1819548-013	04-Dec-2018 14:10	CPT_MW19_041218_0.2		✓	✓
EM1819548-014	04-Dec-2018 14:15	CPT_MW19_041218_0.5	✓		
EM1819548-015	04-Dec-2018 14:20	CPT_MW19_041218_1.0	✓		
EM1819548-016	04-Dec-2018 14:25	CPT_MW19_041218_2.0		✓	✓
EM1819548-017	04-Dec-2018 14:30	CPT_MW19_041218_3.0	✓		
EM1819548-018	04-Dec-2018 14:35	CPT_MW19_041218_4.0	✓		

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - 448.3 Water VIC EPA IWRG621 - Water Equivalent Suite	WATER - W-18 TRH(C6 - C9)/BTEXN
EM1819548-019	04-Dec-2018 00:00	CPT_QC301_041218	✓	
EM1819548-020	04-Dec-2018 00:00	CPT_QC401_041218		✓
EM1819548-021	04-Dec-2018 00:00	CPT_QC502_041218		✓
EM1819548-022	04-Dec-2018 00:00	CPT_QC503_041218		✓



Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EA005-P: pH by PC Titrator							
CPT_QC301_041218	Clear Plastic Bottle - Natural	----	04-Dec-2018	04-Dec-2018	✔	06-Dec-2018	✖

Requested Deliverables

ACCOUNTS PAYABLE

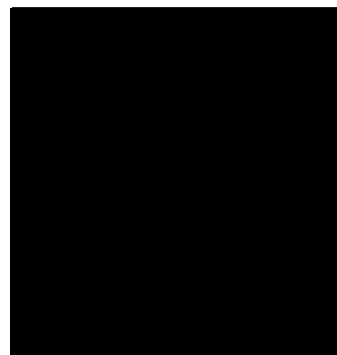
- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

[REDACTED]

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

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[REDACTED]

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

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CERTIFICATE OF ANALYSIS

Work Order : **EM1819548**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60582811
Order number : 60582811
C-O-C number : ----
Sampler : SM
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 22
No. of samples analysed : 10

Page : 1 of 19
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 04-Dec-2018 17:35
Date Analysis Commenced : 06-Dec-2018
Issue Date : 14-Dec-2018 18:50



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
[REDACTED]	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
[REDACTED]	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP071: EM1819704_001 Poor duplicate precision due to suspected sample heterogeneity. Insufficient sample remains to re-extraction and re-analysis
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW05_041218_0.2	CPT_MW05_041218_2.0	CPT_MW18_041218_0.5	CPT_MW18_041218_4.0	CPT_MW19_041218_0.2
Client sampling date / time					04-Dec-2018 08:20	04-Dec-2018 08:40	04-Dec-2018 12:05	04-Dec-2018 12:25	04-Dec-2018 14:10
Compound	CAS Number	LOR	Unit		EM1819548-001	EM1819548-004	EM1819548-008	EM1819548-012	EM1819548-013
				Result	Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit		5.0	7.2	4.9	5.6	4.8
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		17.7	16.8	25.2	25.6	24.0
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		17	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Copper	7440-50-8	5	mg/kg		16	<5	24	10	18
Lead	7439-92-1	5	mg/kg		62	8	17	15	21
Molybdenum	7439-98-7	2	mg/kg		<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg		3	<2	10	6	14
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg		<2	<2	<2	<2	<2
Tin	7440-31-5	5	mg/kg		<5	<5	<5	<5	<5
Zinc	7440-66-6	5	mg/kg		12	<5	<5	<5	13
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	0.6
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg		<1	<1	1	<1	1
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg		410	110	100	200	120
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Styrene	100-42-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW05_041218_0.2	CPT_MW05_041218_2.0	CPT_MW18_041218_0.5	CPT_MW18_041218_4.0	CPT_MW19_041218_0.2
Client sampling date / time					04-Dec-2018 08:20	04-Dec-2018 08:40	04-Dec-2018 12:05	04-Dec-2018 12:25	04-Dec-2018 14:10
Compound	CAS Number	LOR	Unit		EM1819548-001	EM1819548-004	EM1819548-008	EM1819548-012	EM1819548-013
					Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02
1,1-Dichloroethene	75-35-4	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01
Methylene chloride	75-09-2	0.4	mg/kg		<0.4	<0.4	<0.4	<0.4	<0.4
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01
Chloroform	67-66-3	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichloroethane	107-06-2	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloroethene	79-01-6	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg		<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethene	127-18-4	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02
1,4-Dichlorobenzene	106-46-7	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichlorobenzene	95-50-1	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02
1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	<0.01
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
2,4-Dichlorophenol	120-83-2	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
2,6-Dichlorophenol	87-65-0	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW05_041218_ 0.2	CPT_MW05_041218_ 2.0	CPT_MW18_041218_ 0.5	CPT_MW18_041218_ 4.0	CPT_MW19_041218_ 0.2
Client sampling date / time					04-Dec-2018 08:20	04-Dec-2018 08:40	04-Dec-2018 12:05	04-Dec-2018 12:25	04-Dec-2018 14:10
Compound	CAS Number	LOR	Unit		EM1819548-001	EM1819548-004	EM1819548-008	EM1819548-012	EM1819548-013
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Halogenated) - Continued									
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Pentachlorophenol	87-86-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Phenols (halogenated)	----	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		<1	<1	<1	<1	<1
2-Methylphenol	95-48-7	1	mg/kg		<1	<1	<1	<1	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	1	mg/kg		<1	<1	<1	<1	<1
2,4-Dimethylphenol	105-67-9	1	mg/kg		<1	<1	<1	<1	<1
2,4-Dinitrophenol	51-28-5	5	mg/kg		<5	<5	<5	<5	<5
4-Nitrophenol	100-02-7	5	mg/kg		<5	<5	<5	<5	<5
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg		<5	<5	<5	<5	<5
Dinoseb	88-85-7	5	mg/kg		<5	<5	<5	<5	<5
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg		<5	<5	<5	<5	<5
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		<1	<1	<1	<1	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW05_041218_ 0.2	CPT_MW05_041218_ 2.0	CPT_MW18_041218_ 0.5	CPT_MW18_041218_ 4.0	CPT_MW19_041218_ 0.2
Client sampling date / time					04-Dec-2018 08:20	04-Dec-2018 08:40	04-Dec-2018 12:05	04-Dec-2018 12:25	04-Dec-2018 14:10
Compound	CAS Number	LOR	Unit		EM1819548-001	EM1819548-004	EM1819548-008	EM1819548-012	EM1819548-013
					Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
beta-BHC	319-85-7	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
gamma-BHC	58-89-9	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
delta-BHC	319-86-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
Heptachlor	76-44-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
Aldrin	309-00-2	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
4,4'-DDE	72-55-9	0.05	mg/kg		0.44	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
Endrin	72-20-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
4,4'-DDT	50-29-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
^ Sum of organochlorine pesticides	----	0.03	mg/kg		0.44	<0.03	<0.03	<0.03	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		0.44	<0.05	<0.05	<0.05	<0.05
^ Chlordane	57-74-9	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	<0.03
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW05_041218_ 0.2	CPT_MW05_041218_ 2.0	CPT_MW18_041218_ 0.5	CPT_MW18_041218_ 4.0	CPT_MW19_041218_ 0.2
Client sampling date / time					04-Dec-2018 08:20	04-Dec-2018 08:40	04-Dec-2018 12:05	04-Dec-2018 12:25	04-Dec-2018 14:10
Compound	CAS Number	LOR	Unit		EM1819548-001	EM1819548-004	EM1819548-008	EM1819548-012	EM1819548-013
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	180
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	200
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	380
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		150	<100	110	<100	310
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		150	<50	110	<50	310
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		118	108	122	118	114
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		78.0	75.7	73.9	69.2	75.8
Toluene-D8	2037-26-5	0.1	%		77.3	63.9	67.6	66.0	71.4
4-Bromofluorobenzene	460-00-4	0.1	%		86.4	80.9	80.3	79.2	80.9
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		106	97.3	114	102	93.3
2-Chlorophenol-D4	93951-73-6	0.025	%		81.7	78.1	88.9	79.4	70.8
2,4,6-Tribromophenol	118-79-6	0.025	%		98.7	79.0	103	74.9	87.3
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		98.3	94.3	105	96.2	87.2
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%		87.7	82.5	88.3	82.1	77.1
2-Fluorobiphenyl	321-60-8	0.025	%		105	100	112	100	92.4
Anthracene-d10	1719-06-8	0.025	%		110	90.7	113	99.3	95.7
4-Terphenyl-d14	1718-51-0	0.025	%		105	96.1	107	96.6	90.6



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW19_041218_2.0	----	----	----	----
				Client sampling date / time	04-Dec-2018 14:25	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1819548-016	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit	4.9	----	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	31.0	----	----	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----	----
Copper	7440-50-8	5	mg/kg	9	----	----	----	----	----
Lead	7439-92-1	5	mg/kg	16	----	----	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----	----
Nickel	7440-02-0	2	mg/kg	4	----	----	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----	----
Silver	7440-22-4	2	mg/kg	<2	----	----	----	----	----
Tin	7440-31-5	5	mg/kg	<5	----	----	----	----	----
Zinc	7440-66-6	5	mg/kg	<5	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	----	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg	<1	----	----	----	----	----
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg	170	----	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----	----
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	----	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW19_041218_2.0	----	----	----	----
Client sampling date / time					04-Dec-2018 14:25	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1819548-016	-----	-----	-----	-----
Result						----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		<0.02	----	----	----	----
1,1-Dichloroethene	75-35-4	0.01	mg/kg		<0.01	----	----	----	----
Methylene chloride	75-09-2	0.4	mg/kg		<0.4	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg		<0.02	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg		<0.01	----	----	----	----
Chloroform	67-66-3	0.02	mg/kg		<0.02	----	----	----	----
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg		<0.01	----	----	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg		<0.01	----	----	----	----
1,2-Dichloroethane	107-06-2	0.02	mg/kg		<0.02	----	----	----	----
Trichloroethene	79-01-6	0.02	mg/kg		<0.02	----	----	----	----
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg		<0.04	----	----	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg		<0.02	----	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg		<0.01	----	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg		<0.02	----	----	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg		<0.02	----	----	----	----
Chlorobenzene	108-90-7	0.02	mg/kg		<0.02	----	----	----	----
1,4-Dichlorobenzene	106-46-7	0.02	mg/kg		<0.02	----	----	----	----
1,2-Dichlorobenzene	95-50-1	0.02	mg/kg		<0.02	----	----	----	----
1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg		<0.01	----	----	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	----	----	----	----
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		<0.03	----	----	----	----
2,4-Dichlorophenol	120-83-2	0.03	mg/kg		<0.03	----	----	----	----
2,6-Dichlorophenol	87-65-0	0.03	mg/kg		<0.03	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg		<0.03	----	----	----	----
2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg		<0.05	----	----	----	----
2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg		<0.05	----	----	----	----
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg		<0.03	----	----	----	----
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg		<0.05	----	----	----	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW19_041218_2.0	----	----	----	----
Client sampling date / time					04-Dec-2018 14:25	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1819548-016	-----	-----	-----	-----
					Result	----	----	----	----
EP075A: Phenolic Compounds (Halogenated) - Continued									
Pentachlorophenol	87-86-5	0.2	mg/kg		<0.2	----	----	----	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg		<0.03	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		<1	----	----	----	----
2-Methylphenol	95-48-7	1	mg/kg		<1	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	----	----	----
2-Nitrophenol	88-75-5	1	mg/kg		<1	----	----	----	----
2,4-Dimethylphenol	105-67-9	1	mg/kg		<1	----	----	----	----
2,4-Dinitrophenol	51-28-5	5	mg/kg		<5	----	----	----	----
4-Nitrophenol	100-02-7	5	mg/kg		<5	----	----	----	----
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg		<5	----	----	----	----
Dinoseb	88-85-7	5	mg/kg		<5	----	----	----	----
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg		<5	----	----	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		<1	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	----	----	----	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW19_041218_2.0	----	----	----	----
Client sampling date / time					04-Dec-2018 14:25	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1819548-016	-----	-----	-----	-----
				Result	----	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	----	----	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		<0.03	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		<0.03	----	----	----	----
beta-BHC	319-85-7	0.03	mg/kg		<0.03	----	----	----	----
gamma-BHC	58-89-9	0.03	mg/kg		<0.03	----	----	----	----
delta-BHC	319-86-8	0.03	mg/kg		<0.03	----	----	----	----
Heptachlor	76-44-8	0.03	mg/kg		<0.03	----	----	----	----
Aldrin	309-00-2	0.03	mg/kg		<0.03	----	----	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg		<0.03	----	----	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg		<0.03	----	----	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg		<0.03	----	----	----	----
Endosulfan 1	959-98-8	0.03	mg/kg		<0.03	----	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Dieldrin	60-57-1	0.03	mg/kg		<0.03	----	----	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg		<0.03	----	----	----	----
Endrin	72-20-8	0.03	mg/kg		<0.03	----	----	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg		<0.03	----	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg		<0.03	----	----	----	----
4,4'-DDT	50-29-3	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.03	mg/kg		<0.03	----	----	----	----
^ Sum of organochlorine pesticides	----	0.03	mg/kg		<0.03	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		<0.03	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	----
^ Chlordane	57-74-9	0.03	mg/kg		<0.03	----	----	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		<0.03	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW19_041218_2.0	----	----	----	----
Client sampling date / time					04-Dec-2018 14:25	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1819548-016	-----	-----	-----	-----
Result						----	----	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)		----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction		----	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction		----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction		----	100	mg/kg	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)		----	50	mg/kg	<50	----	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)		----	50	mg/kg	<50	----	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX		10	mg/kg	<10	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3		0.1	%	117	----	----	----	----
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0		0.1	%	81.4	----	----	----	----
Toluene-D8	2037-26-5		0.1	%	77.9	----	----	----	----
4-Bromofluorobenzene	460-00-4		0.1	%	87.2	----	----	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3		0.025	%	106	----	----	----	----
2-Chlorophenol-D4	93951-73-6		0.025	%	83.4	----	----	----	----
2,4,6-Tribromophenol	118-79-6		0.025	%	82.8	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0		0.025	%	96.0	----	----	----	----
1,2-Dichlorobenzene-D4	2199-69-1		0.025	%	79.3	----	----	----	----
2-Fluorobiphenyl	321-60-8		0.025	%	99.7	----	----	----	----
Anthracene-d10	1719-06-8		0.025	%	100	----	----	----	----
4-Terphenyl-d14	1718-51-0		0.025	%	97.9	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC301_041218	CPT_QC401_041218	CPT_QC502_041218	CPT_QC503_041218	----
Client sampling date / time					04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1819548-019	EM1819548-020	EM1819548-021	EM1819548-022	-----
					Result	Result	Result	Result	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		6.27	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Silver	7440-22-4	0.001	mg/L		<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG050F: Dissolved Hexavalent Chromium									
Hexavalent Chromium	18540-29-9	0.01	mg/L		<0.01	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	0.004	mg/L		<0.004	----	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
^ Total Polychlorinated biphenyls	----	1	µg/L		<1	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	5	µg/L		<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Vinyl chloride	75-01-4	50	µg/L		<50	----	----	----	----
1,1-Dichloroethene	75-35-4	5	µg/L		<5	----	----	----	----
Methylene chloride	75-09-2	5	µg/L		<5	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	5	µg/L		<5	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	5	µg/L		<5	----	----	----	----
1,1,1-Trichloroethane	71-55-6	5	µg/L		<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	----	----	----	----
1,2-Dichloroethane	107-06-2	5	µg/L		<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC301_041218	CPT_QC401_041218	CPT_QC502_041218	CPT_QC503_041218	----
Client sampling date / time					04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1819548-019	EM1819548-020	EM1819548-021	EM1819548-022	-----
					Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	----	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	----	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	----	----	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	2	µg/L		<2	----	----	----	----
2,4-Dichlorophenol	120-83-2	2	µg/L		<2	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC301_041218	CPT_QC401_041218	CPT_QC502_041218	CPT_QC503_041218	----
Client sampling date / time					04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1819548-019	EM1819548-020	EM1819548-021	EM1819548-022	-----
					Result	Result	Result	Result	----
EP075A: Phenolic Compounds (Halogenated) - Continued									
2,6-Dichlorophenol	87-65-0	2	µg/L		<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	4	µg/L		<4	----	----	----	----
2,4,5-Trichlorophenol	95-95-4	2	µg/L		<2	----	----	----	----
2,4,6-Trichlorophenol	88-06-2	2	µg/L		<2	----	----	----	----
2,3,5,6-Tetrachlorophenol	935-95-5	2	µg/L		<2	----	----	----	----
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	2	µg/L		<2	----	----	----	----
Pentachlorophenol	87-86-5	2	µg/L		<2	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	4	µg/L		<4	----	----	----	----
2-Methylphenol	95-48-7	4	µg/L		<4	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L		<4	----	----	----	----
2-Nitrophenol	88-75-5	4	µg/L		<4	----	----	----	----
2,4-Dimethylphenol	105-67-9	4	µg/L		<4	----	----	----	----
2,4-Dinitrophenol	51-28-5	100	µg/L		<100	----	----	----	----
4-Nitrophenol	100-02-7	50	µg/L		<50	----	----	----	----
2-Methyl-4,6-dinitrophenol	8071-51-0	50	µg/L		<50	----	----	----	----
Dinoseb	88-85-7	50	µg/L		<50	----	----	----	----
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	50	µg/L		<50	----	----	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDT	50-29-3	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC301_041218	CPT_QC401_041218	CPT_QC502_041218	CPT_QC503_041218	----
Client sampling date / time					04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1819548-019	EM1819548-020	EM1819548-021	EM1819548-022	-----
					Result	Result	Result	Result	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		96.1	----	----	----	----
EP074S: VOC Surrogates									
1,2-Dichloroethane-D4	17060-07-0	5	%		89.6	----	----	----	----
Toluene-D8	2037-26-5	5	%		87.7	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		96.0	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		25.4	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		57.9	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%		73.5	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		74.8	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		77.5	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		83.4	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC301_041218	CPT_QC401_041218	CPT_QC502_041218	CPT_QC503_041218	----
Client sampling date / time					04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1819548-019	EM1819548-020	EM1819548-021	EM1819548-022	-----
					Result	Result	Result	Result	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.25	%		26.6	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.25	%		69.5	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.25	%		64.0	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.25	%		77.9	----	----	----	----
1,2-Dichlorobenzene-D4	2199-69-1	0.25	%		74.4	----	----	----	----
2-Fluorobiphenyl	321-60-8	0.25	%		81.2	----	----	----	----
Anthracene-d10	1719-06-8	0.25	%		82.0	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.25	%		76.2	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		110	115	109	112	----
Toluene-D8	2037-26-5	2	%		92.0	91.6	93.5	89.4	----
4-Bromofluorobenzene	460-00-4	2	%		110	111	113	103	----



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Sub-Matrix: SOIL		□□□□ □ □□□ s □	
<i>Compound</i>	<i>CAS Number</i>	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1,2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	28	134
2-Chlorophenol-D4	93951-73-6	27	123
2,4,6-Tribromophenol	118-79-6	25	149
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	29	125
1,2-Dichlorobenzene-D4	2199-69-1	31	117
2-Fluorobiphenyl	321-60-8	44	136
Anthracene-d10	1719-06-8	53	133
4-Terphenyl-d14	1718-51-0	59	141

Sub-Matrix: WATER		□□□□ □ □□□ s □	
<i>Compound</i>	<i>CAS Number</i>	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	125
EP074S: VOC Surrogates			
1,2-Dichloroethane-D4	17060-07-0	72	132
Toluene-D8	2037-26-5	77	132
4-Bromofluorobenzene	460-00-4	67	131
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	13	90
2-Chlorophenol-D4	93951-73-6	42	117
2,4,6-Tribromophenol	118-79-6	52	140
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	49	136

Sub-Matrix: WATER		☐☐☐☐ ☐ ☐☐☐ ☐☐ s ☐	
Compound	CAS Number	☐☐%	☐☐☐
EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued			
1,2-Dichlorobenzene-D4	2199-69-1	49	128
2-Fluorobiphenyl	321-60-8	57	137
Anthracene-d10	1719-06-8	67	137
4-Terphenyl-d14	1718-51-0	66	136
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1819548**

Page : 1 of 14

Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Project : 60582811
Site : GIJPP Groundwater Study
Sampler : SM
Order number : 60582811

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 04-Dec-2018
Issue Date : 14-Dec-2018
No. of samples received : 22
No. of samples analysed : 10

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- Duplicate outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EP080/071: Total Petroleum Hydrocarbons	EM1819704--001	Anonymous	C10 - C14 Fraction	----	22.7 %	0% - 20%	RPD exceeds LOR based limits
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	EM1819704--001	Anonymous	>C10 - C16 Fraction	----	20.9 %	0% - 20%	RPD exceeds LOR based limits

Method	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural CPT_QC301_041218	----	----	----	11-Dec-2018	04-Dec-2018	7

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	12	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	12	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA001: pH in soil using 0.01M CaCl extract								
Soil Glass Jar - Unpreserved (EA001)		04-Dec-2018	10-Dec-2018	11-Dec-2018	✓	10-Dec-2018	10-Dec-2018	✓
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,							
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)		04-Dec-2018	----	----	----	07-Dec-2018	18-Dec-2018	✓
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,							
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)		04-Dec-2018	07-Dec-2018	02-Jun-2019	✓	07-Dec-2018	02-Jun-2019	✓
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,							
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)		04-Dec-2018	07-Dec-2018	01-Jan-2019	✓	07-Dec-2018	01-Jan-2019	✓
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,							
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EG048: Hexavalent Chromium (Alkaline Digest)								
Soil Glass Jar - Unpreserved (EG048G)		04-Dec-2018	07-Dec-2018	01-Jan-2019	✓	07-Dec-2018	14-Dec-2018	✓
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,							
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EK026SF: Total CN by Segmented Flow Analyser								
Soil Glass Jar - Unpreserved (EK026SF)		04-Dec-2018	10-Dec-2018	18-Dec-2018	✓	11-Dec-2018	24-Dec-2018	✓
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,							
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EK040T: Fluoride Total								
Soil Glass Jar - Unpreserved (EK040T)		04-Dec-2018	07-Dec-2018	01-Jan-2019	✓	10-Dec-2018	01-Jan-2019	✓
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,							
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066-EM)		04-Dec-2018	07-Dec-2018	18-Dec-2018	✓	07-Dec-2018	16-Jan-2019	✓
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,							
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074-UT)								
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,	04-Dec-2018	06-Dec-2018	11-Dec-2018	✔	07-Dec-2018	11-Dec-2018	✔
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074-UT)								
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,	04-Dec-2018	06-Dec-2018	11-Dec-2018	✔	07-Dec-2018	11-Dec-2018	✔
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EP074I: Volatile Halogenated Compounds								
Soil Glass Jar - Unpreserved (EP074-UT)								
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,	04-Dec-2018	06-Dec-2018	11-Dec-2018	✔	07-Dec-2018	11-Dec-2018	✔
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EP075A: Phenolic Compounds (Halogenated)								
Soil Glass Jar - Unpreserved (EP075-EM)								
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,	04-Dec-2018	07-Dec-2018	18-Dec-2018	✔	07-Dec-2018	16-Jan-2019	✔
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EP075A: Phenolic Compounds (Non-halogenated)								
Soil Glass Jar - Unpreserved (EP075-EM)								
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,	04-Dec-2018	07-Dec-2018	18-Dec-2018	✔	07-Dec-2018	16-Jan-2019	✔
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EP075B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075-EM)								
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,	04-Dec-2018	07-Dec-2018	18-Dec-2018	✔	07-Dec-2018	16-Jan-2019	✔
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EP075I: Organochlorine Pesticides								
Soil Glass Jar - Unpreserved (EP075-EM)								
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,	04-Dec-2018	07-Dec-2018	18-Dec-2018	✔	07-Dec-2018	16-Jan-2019	✔
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074-UT)		04-Dec-2018	06-Dec-2018	11-Dec-2018	✔	07-Dec-2018	11-Dec-2018	✔
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,							
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
Soil Glass Jar - Unpreserved (EP071-EM)		04-Dec-2018	07-Dec-2018	18-Dec-2018	✔	07-Dec-2018	16-Jan-2019	✔
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,							
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP074-UT)		04-Dec-2018	06-Dec-2018	11-Dec-2018	✔	07-Dec-2018	11-Dec-2018	✔
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,							
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							
Soil Glass Jar - Unpreserved (EP071-EM)		04-Dec-2018	07-Dec-2018	18-Dec-2018	✔	07-Dec-2018	16-Jan-2019	✔
CPT_MW05_041218_0.2,	CPT_MW05_041218_2.0,							
CPT_MW18_041218_0.5,	CPT_MW18_041218_4.0,							
CPT_MW19_041218_0.2,	CPT_MW19_041218_2.0							

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) CPT_QC301_041218	04-Dec-2018	----	----	----	11-Dec-2018	04-Dec-2018	✖
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F) CPT_QC301_041218	04-Dec-2018	----	----	----	11-Dec-2018	02-Jun-2019	✔
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) CPT_QC301_041218	04-Dec-2018	----	----	----	09-Dec-2018	01-Jan-2019	✔
EG050F: Dissolved Hexavalent Chromium							
White Plastic Bottle-NaOH (EG050F) CPT_QC301_041218	04-Dec-2018	----	----	----	06-Dec-2018	01-Jan-2019	✔
EK026SF: Total CN by Segmented Flow Analyser							
White Plastic Bottle-NaOH (EK026SF) CPT_QC301_041218	04-Dec-2018	----	----	----	07-Dec-2018	18-Dec-2018	✔
EK040P: Fluoride by PC Titrator							
Clear Plastic Bottle - Natural (EK040P) CPT_QC301_041218	04-Dec-2018	----	----	----	11-Dec-2018	01-Jan-2019	✔



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066) CPT_QC301_041218	04-Dec-2018	07-Dec-2018	11-Dec-2018	✓	10-Dec-2018	16-Jan-2019	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC301_041218	04-Dec-2018	07-Dec-2018	18-Dec-2018	✓	07-Dec-2018	18-Dec-2018	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC301_041218	04-Dec-2018	07-Dec-2018	18-Dec-2018	✓	07-Dec-2018	18-Dec-2018	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC301_041218	04-Dec-2018	07-Dec-2018	18-Dec-2018	✓	07-Dec-2018	18-Dec-2018	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC301_041218	04-Dec-2018	07-Dec-2018	18-Dec-2018	✓	07-Dec-2018	18-Dec-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) CPT_QC301_041218	04-Dec-2018	07-Dec-2018	11-Dec-2018	✓	10-Dec-2018	16-Jan-2019	✓
EP075A: Phenolic Compounds (Halogenated)							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC301_041218	04-Dec-2018	07-Dec-2018	11-Dec-2018	✓	10-Dec-2018	16-Jan-2019	✓
EP075A: Phenolic Compounds (Non-halogenated)							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC301_041218	04-Dec-2018	07-Dec-2018	11-Dec-2018	✓	10-Dec-2018	16-Jan-2019	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC301_041218	04-Dec-2018	07-Dec-2018	11-Dec-2018	✓	10-Dec-2018	16-Jan-2019	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) CPT_QC301_041218	04-Dec-2018	07-Dec-2018	11-Dec-2018	✓	10-Dec-2018	16-Jan-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC301_041218, CPT_QC401_041218, CPT_QC502_041218, CPT_QC503_041218	04-Dec-2018	07-Dec-2018	18-Dec-2018	✓	07-Dec-2018	18-Dec-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) CPT_QC301_041218	04-Dec-2018	07-Dec-2018	11-Dec-2018	✓	10-Dec-2018	16-Jan-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC301_041218, CPT_QC401_041218, CPT_QC502_041218, CPT_QC503_041218	04-Dec-2018	07-Dec-2018	18-Dec-2018	✓	07-Dec-2018	18-Dec-2018	✓



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC301_041218, CPT_QC502_041218,	CPT_QC401_041218, CPT_QC503_041218	04-Dec-2018	07-Dec-2018	18-Dec-2018	✔	07-Dec-2018	18-Dec-2018	✔



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Matrix Spikes (MS) - Continued							
Total Fluoride	EK040T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	14	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	18	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	2	4	50.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	5	20.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	12	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	7	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	0	3	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	13	15.38	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	13	15.38	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	4	25.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	12	8.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	10.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	4	25.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Fluoride by PC Titrator	EK040P	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	12	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	7	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	0	3	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001	SOIL	In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3)
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	SOIL	In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3)
Total Fluoride	EK040T	SOIL	(In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
PCB - VIC EPA 448.3 Screen	EP066-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
TRH - Semivolatile Fraction	EP071-EM	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
Volatile Organic Compounds - Ultra-trace	EP074-UT	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)



Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds - Ultra-trace - Summations	EP074-UT-SUM	SOIL	Summation of MAHs and VHCs
Semivolatile Organic Compounds - Waste Classification	EP075-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502)
SVOC - Waste Classification (Sums)	EP075-EM-SUM	SOIL	Summations for EP075 (EM variation)
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Metals by ICP-MS - Suite B	EG020B-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium - Dissolved	EG050F	WATER	In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	WATER	In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Semivolatile Organic Compounds - Waste Classification	EP075-EM	WATER	In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH.
pH in soil using a 0.01M CaCl2 extract	EA001-PR	SOIL	In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
Total Fluoride	EK040T-PR	SOIL	In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Methanolic Extraction of Soils - Ultra-trace.	ORG16-UT	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids - VIC EPA Screen	ORG17-EM	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Separatory Funnel Extraction of Liquids	ORG14-EM	WATER	In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container.



Preparation Methods	Method	Matrix	Method Descriptions
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.



Environmental

QUALITY CONTROL REPORT

Work Order	: EM1819548	Page	: 1 of 20
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60582811	Date Samples Received	: 04-Dec-2018
Order number	: 60582811	Date Analysis Commenced	: 06-Dec-2018
C-O-C number	: ----	Issue Date	: 14-Dec-2018
Sampler	: SM		
Site	: GIJPP Groundwater Study		
Quote number	: EN/096/18		
No. of samples received	: 22		
No. of samples analysed	: 10		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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Senior Inorganic Chemist
2IC Organic Chemist
2IC Organic Chemist
Senior Inorganic Instrument Chemist
Senior Organic Chemist

Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2084118)									
EM1819548-001	CPT_MW05_041218_0.2	EA001: pH (CaCl ₂)	----	0.1	pH Unit	5.0	4.9	0.00	0% - 20%
EM1819647-004	Anonymous	EA001: pH (CaCl ₂)	----	0.1	pH Unit	8.6	8.9	2.62	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2081009)									
EM1819417-001	Anonymous	EA055: Moisture Content	----	0.1	%	18.2	17.8	2.34	0% - 50%
EM1819548-004	CPT_MW05_041218_2.0	EA055: Moisture Content	----	0.1	%	16.8	17.1	2.24	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 2081123)									
EM1819417-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	19	17	10.1	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	16	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	76	87	13.6	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	52	53	3.30	0% - 50%
EM1819548-001	CPT_MW05_041218_0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	4	0.00	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	17	16	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	17	7.26	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	62	55	13.4	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QC Lot: 2081123) - continued									
EM1819548-001	CPT_MW05_041218_0.2	EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	12	12	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2081122)									
EM1819417-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1819548-001	CPT_MW05_041218_0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2081615)									
EM1819417-001	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1819548-001	CPT_MW05_041218_0.2	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2085106)									
EM1819417-001	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	1	1	0.00	No Limit
EM1819548-001	CPT_MW05_041218_0.2	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.00	No Limit
EK040T: Fluoride Total (QC Lot: 2081112)									
EM1819417-001	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	300	340	10.7	No Limit
EM1819548-001	CPT_MW05_041218_0.2	EK040T: Fluoride	16984-48-8	40	mg/kg	410	390	5.74	0% - 50%
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2079754)									
EM1819417-001	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1819548-004	CPT_MW05_041218_2.0	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2079413)									
EM1819548-001	CPT_MW05_041218_0.2	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2079413)									
EM1819548-001	CPT_MW05_041218_0.2	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP074I: Volatile Halogenated Compounds (QC Lot: 2079413)									
EM1819548-001	CPT_MW05_041218_0.2	EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074I: Volatile Halogenated Compounds (QC Lot: 2079413) - continued									
EM1819548-001	CPT_MW05_041218_0.2	EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.00	No Limit
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.00	No Limit
EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2079752)									
EM1819417-001	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-9 0-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EM1819548-004	CPT_MW05_041218_2.0	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-9 0-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2079752)									
EM1819417-001	Anonymous	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.00	No Limit
EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.00	No Limit		



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2079752) - continued									
EM1819548-004	CPT_MW05_041218_2.0	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2,4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2,4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.00	No Limit
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2079752)									
EM1819417-001	Anonymous	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			207-08-9						
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1819548-004	CPT_MW05_041218_2.0	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			207-08-9						
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2079752) - continued									
EM1819548-004	CPT_MW05_041218_2.0	EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075I: Organochlorine Pesticides (QC Lot: 2079752)									
EM1819417-001	Anonymous	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4,4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EM1819548-004	CPT_MW05_041218_2.0	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075I: Organochlorine Pesticides (QC Lot: 2079752) - continued									
EM1819548-004	CPT_MW05_041218_2.0	EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2079413)									
EM1819548-001	CPT_MW05_041218_0.2	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2079753)									
EM1819417-001	Anonymous	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM1819548-004	CPT_MW05_041218_2.0	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2079413)									
EM1819548-001	CPT_MW05_041218_0.2	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2079753)									
EM1819417-001	Anonymous	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	120	130	0.00	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM1819548-004	CPT_MW05_041218_2.0	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA005P: pH by PC Titrator (QC Lot: 2085758)									
EM1819417-011	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.72	6.13	9.18	0% - 20%
EM1819578-009	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.16	7.18	0.279	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2081716)									
EM1819658-003	Anonymous	EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	0.005	136	No Limit
EM1819417-010	Anonymous	EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2081718)									
EM1819592-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.008	0.008	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2081718) - continued									
EM1819592-001	Anonymous	EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1819417-010	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 2081717)									
EM1819658-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1819417-010	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 2079783)									
EM1819417-010	Anonymous	EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2081361)									
EB1829700-048	Anonymous	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	0.00	No Limit
EM1819658-001	Anonymous	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	0.00	No Limit
EK040P: Fluoride by PC Titrator (QC Lot: 2085761)									
EM1819533-024	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	1.3	1.3	0.00	0% - 50%
EM1819691-015	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.3	0.3	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2081643)									
EM1819522-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
EM1819716-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2081643)									
EM1819522-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Methylene chloride	75-09-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2081643) - continued									
EM1819522-001	Anonymous	EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
EM1819716-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Methylene chloride	75-09-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2081643)									
EM1819522-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
EM1819716-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2081643)									
EM1819522-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	8	6	18.2	No Limit
EM1819716-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2080868)									
EM1819704-001	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	590	490	19.2	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	3440	# 4320	22.7	0% - 20%
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	70	38.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2081642)									
EM1819522-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1819716-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2080868)									
EM1819704-001	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	2120	# 2620	20.9	0% - 20%
		EP071: >C16 - C34 Fraction	----	100	µg/L	600	420	35.1	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2081642)									

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 Work Order : EM1819548
 Client : AECOM Australia Pty Ltd
 Project : 60582811



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2081642) - continued									
EM1819522-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1819716-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2081642)									
EM1819522-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
EM1819716-001	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result			LCS	Low
EG005T: Total Metals by ICP-AES (QCLot: 2081123)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	91.3	78	107
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	86.7	76	108
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	86.0	78	108
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	85.0	78	106
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	90.1	78	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	91.1	80	109
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	103	92	110
EG005T: Silver	7440-22-4	2	mg/kg	<2	2.1 mg/kg	93.4	80	108
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.2 mg/kg	106	78	117
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	93.2	79	110
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2081122)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	95.9	77	104
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2081615)								
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	79.6	75	112
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2085106)								
EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	20 mg/kg	105	80	107
EK040T: Fluoride Total (QCLot: 2081112)								
EK040T: Fluoride	16984-48-8	40	mg/kg	<40	400 mg/kg	104	75	110
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2079754)								
EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	101	63	118
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2079413)								
EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	2.1 mg/kg	86.3	68	117
EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	2.1 mg/kg	89.0	67	118
EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.1 mg/kg	88.4	66	119
EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	4.2 mg/kg	88.3	66	115
	106-42-3							
EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	2.1 mg/kg	90.6	71	115
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2.1 mg/kg	90.3	68	113
EP074H: Naphthalene (QCLot: 2079413)								
EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	0.6 mg/kg	98.6	75	113
EP074I: Volatile Halogenated Compounds (QCLot: 2079413)								
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	63.5	51	136
EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	75.5	56	125



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP074I: Volatile Halogenated Compounds (QCLot: 2079413) - continued								
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	90.3	70	117
EP074-UT: trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	86.1	61	122
EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	88.6	70	114
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	88.5	69	112
EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	83.9	62	124
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	80.7	56	126
EP074-UT: 1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	89.2	73	118
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	85.8	66	117
EP074-UT: 1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	88.8	76	115
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	83.1	62	120
EP074-UT: 1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	0.1 mg/kg	90.9	71	118
EP074-UT: 1,1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	85.7	69	119
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	94.7	47	125
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	90.6	73	114
EP074-UT: 1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	90.6	66	114
EP074-UT: 1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	91.0	73	110
EP074-UT: 1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	92.8	54	121
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2079752)								
EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	2 mg/kg	86.5	69	123
EP075-EM: 2,4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	2 mg/kg	93.2	55	128
EP075-EM: 2,6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	2 mg/kg	103	70	123
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	2 mg/kg	103	56	128
EP075-EM: 2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	2 mg/kg	111	66	126
EP075-EM: 2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	2 mg/kg	110	60	126
EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	4 mg/kg	105	65	124
EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/5 8-90-2	0.05	mg/kg	<0.05	8 mg/kg	79.1	64	128
EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	4 mg/kg	116	43	127
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2079752)								
EP075-EM: Phenol	108-95-2	1	mg/kg	<1	2 mg/kg	87.7	58	126
EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	2 mg/kg	87.2	65	126
EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	4 mg/kg	86.8	64	123
EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	2 mg/kg	88.6	53	128
EP075-EM: 2,4-Dimethylphenol	105-67-9	1	mg/kg	<1	2 mg/kg	83.8	56	136
EP075-EM: 2,4-Dinitrophenol	51-28-5	5	mg/kg	<5	12 mg/kg	100	41	156
EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	12 mg/kg	85.6	48	130
EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<5	12 mg/kg	82.8	47	125
EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	12 mg/kg	80.9	51	123
EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<5	10 mg/kg	85.8	36	137



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2079752)								
EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	2 mg/kg	99.2	70	123
EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	2 mg/kg	95.8	70	130
EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	2 mg/kg	106	68	131
EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	2 mg/kg	99.4	72	128
EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	2 mg/kg	98.7	75	128
EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	2 mg/kg	99.4	55	127
EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	2 mg/kg	100	75	128
EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	2 mg/kg	103	73	130
EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	2 mg/kg	112	72	131
EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	2 mg/kg	113	77	133
EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	113	76	133
	207-08-9							
EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	2 mg/kg	110	70	130
EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	2 mg/kg	111	72	134
EP075-EM: Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	2 mg/kg	111	72	135
EP075-EM: Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	2 mg/kg	110	71	134
EP075I: Organochlorine Pesticides (QCLot: 2079752)								
EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	2 mg/kg	101	71	122
EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	2 mg/kg	100	70	126
EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	2 mg/kg	102	70	130
EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	2 mg/kg	102	71	129
EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	2 mg/kg	111	74	128
EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	2 mg/kg	110	72	126
EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	2 mg/kg	108	72	127
EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	2 mg/kg	111	73	129
EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	2 mg/kg	112	72	131
EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	2 mg/kg	113	73	130
EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	2 mg/kg	99.7	64	137
EP075-EM: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	2 mg/kg	106	73	131
EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	2 mg/kg	108	72	132
EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	2 mg/kg	118	42	160
EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	2 mg/kg	78.0	55	148
EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	2 mg/kg	113	73	132
EP075-EM: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	2 mg/kg	114	75	134
EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	2 mg/kg	117	73	133
EP075-EM: 4,4`-DDT	50-29-3	0.05	mg/kg	<0.05	2 mg/kg	123	67	133
EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	2 mg/kg	102	67	135
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2079413)								
EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	39.6 mg/kg	87.3	63	122

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2081716)								
EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	0.02 mg/L	93.6	84	116
EG020F: Dissolved Metals by ICP-MS (QCLot: 2081718)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.5	91	107
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	90.9	84	104
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	88.6	82	103
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.1	83	105
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	95.6	83	109
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	91.6	82	106
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	102	82	109
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	93.2	83	109
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	95.5	85	109
EG035F: Dissolved Mercury by FIMS (QCLot: 2081717)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.6	76	114
EG050F: Dissolved Hexavalent Chromium (QCLot: 2079783)								
EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.5 mg/L	93.0	92	111
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2081361)								
EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	0.2 mg/L	101	75	109
EK040P: Fluoride by PC Titrator (QCLot: 2085761)								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	100	87	117
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2080866)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	108	48	124
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2081643)								



Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2081643) - continued								
EP074: Styrene	100-42-5	5	µg/L	<5	20 µg/L	106	79	114
EP074E: Halogenated Aliphatic Compounds (QCLot: 2081643)								
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	200 µg/L	102	64	139
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	20 µg/L	99.3	65	124
EP074: Methylene chloride	75-09-2	5	µg/L	<5	20 µg/L	103	81	144
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	20 µg/L	98.6	73	121
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	20 µg/L	105	78	120
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	20 µg/L	93.8	68	116
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	20 µg/L	90.4	66	119
EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	20 µg/L	110	79	118
EP074: Trichloroethene	79-01-6	5	µg/L	<5	20 µg/L	97.7	70	120
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	20 µg/L	104	87	114
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	20 µg/L	97.7	75	119
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	20 µg/L	93.5	75	112
EP074: 1,1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	20 µg/L	106	81	125
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	20 µg/L	96.1	63	126
EP074F: Halogenated Aromatic Compounds (QCLot: 2081643)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	20 µg/L	104	82	114
EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	20 µg/L	108	76	118
EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	20 µg/L	106	82	112
EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	20 µg/L	101	62	119
EP074G: Trihalomethanes (QCLot: 2081643)								
EP074: Chloroform	67-66-3	5	µg/L	<5	20 µg/L	106	79	119
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2080867)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	81.8	48	110
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	84.2	50	117
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	79.8	53	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	79.6	54	118
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	82.7	59	119
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	82.1	51	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	81.4	61	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	80.6	56	120
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	87.2	53	120
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	90.2	57	122
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	124	56	131
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	122	59	124
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	91.8	54	124



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%)	
							Low	High
CAS Number	LOR	Unit						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2080867) - continued								
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	87.0	55	124
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	87.7	54	124
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	88.2	56	124
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2080860)								
EP075-EM: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	77.8	54	117
EP075-EM: 2,4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	90.1	46	116
EP075-EM: 2,6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	91.3	61	123
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	4	µg/L	<4	10 µg/L	92.5	45	116
EP075-EM: 2,4,5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	92.1	57	131
EP075-EM: 2,4,6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	95.4	42	126
EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	2	µg/L	<2	20 µg/L	89.4	54	136
EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/5 8-90-2	2	µg/L	<2	40 µg/L	63.1	53	125
EP075-EM: Pentachlorophenol	87-86-5	2	µg/L	<2	20 µg/L	93.1	32	122
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2080860)								
EP075-EM: Phenol	108-95-2	4	µg/L	<4	10 µg/L	33.8	18	51
EP075-EM: 2-Methylphenol	95-48-7	4	µg/L	<4	10 µg/L	71.5	49	106
EP075-EM: 3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	20 µg/L	65.7	41	91
EP075-EM: 2-Nitrophenol	88-75-5	4	µg/L	<4	10 µg/L	91.6	48	120
EP075-EM: 2,4-Dimethylphenol	105-67-9	4	µg/L	<4	10 µg/L	89.7	47	128
EP075-EM: 2,4-Dinitrophenol	51-28-5	100	µg/L	<100	60 µg/L	85.3	41	130
EP075-EM: 4-Nitrophenol	100-02-7	50	µg/L	<50	60 µg/L	27.0	19	49
EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	50	µg/L	<50	60 µg/L	71.3	47	126
EP075-EM: Dinoseb	88-85-7	50	µg/L	<50	60 µg/L	71.6	49	128
EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	50	µg/L	<50	50 µg/L	76.1	61	135
EP075I: Organochlorine Pesticides (QCLot: 2080860)								
EP075-EM: alpha-BHC	319-84-6	0.5	µg/L	<0.5	10 µg/L	85.6	57	126
EP075-EM: Heptachlor	76-44-8	0.5	µg/L	<0.5	10 µg/L	82.7	62	134
EP075-EM: Aldrin	309-00-2	0.5	µg/L	<0.5	10 µg/L	81.3	58	133
EP075-EM: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	10 µg/L	75.8	60	133
EP075-EM: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	10 µg/L	74.2	59	132
EP075-EM: 4,4'-DDE	72-55-9	0.5	µg/L	<0.5	10 µg/L	81.3	61	137
EP075-EM: Dieldrin	60-57-1	0.5	µg/L	<0.5	10 µg/L	77.9	59	130
EP075-EM: 4,4'-DDD	72-54-8	0.5	µg/L	<0.5	10 µg/L	82.7	59	135
EP075-EM: 4,4'-DDT	50-29-3	0.5	µg/L	<0.5	10 µg/L	92.3	59	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2080868)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	4331 µg/L	110	51	136
EP071: C15 - C28 Fraction	----	100	µg/L	<100	16952 µg/L	114	58	139

Matrix Spike (MS) Report

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2081123)							
EM1819417-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	89.4	78	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	88.4	84	116
		EG005T: Copper	7440-50-8	50 mg/kg	88.7	82	124
		EG005T: Lead	7439-92-1	50 mg/kg	96.1	76	124
		EG005T: Molybdenum	7439-98-7	50 mg/kg	84.5	79	117
		EG005T: Nickel	7440-02-0	50 mg/kg	82.2	78	120
		EG005T: Selenium	7782-49-2	50 mg/kg	80.8	71	125
		EG005T: Zinc	7440-66-6	50 mg/kg	78.4	74	128
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2081122)							
EM1819417-002	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	104	76	116
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2081615)							



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2081615) - continued							
EM1819417-002	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	40 mg/kg	94.0	58	114
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2085106)							
EM1819417-002	Anonymous	EK026SF: Total Cyanide	57-12-5	20 mg/kg	110	77	113
EK040T: Fluoride Total (QCLot: 2081112)							
EM1819417-002	Anonymous	EK040T: Fluoride	16984-48-8	400 mg/kg	96.0	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2079754)							
EM1819417-002	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	1 mg/kg	93.7	36	152
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2079413)							
EM1819548-004	CPT_MW05_041218_2.0	EP074-UT: Benzene	71-43-2	2 mg/kg	84.0	50	138
		EP074-UT: Toluene	108-88-3	2 mg/kg	83.3	56	134
EP074I: Volatile Halogenated Compounds (QCLot: 2079413)							
EM1819548-004	CPT_MW05_041218_2.0	EP074-UT: 1,1-Dichloroethene	75-35-4	2 mg/kg	79.2	26	141
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	78.4	50	134
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	84.1	28	134
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2079752)							
EM1819417-003	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	1 mg/kg	74.2	34	118
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	1 mg/kg	85.2	41	139
		EP075-EM: Pentachlorophenol	87-86-5	1 mg/kg	28.1	10	144
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2079752)							
EM1819417-003	Anonymous	EP075-EM: Phenol	108-95-2	1 mg/kg	76.6	32	134
		EP075-EM: 2-Nitrophenol	88-75-5	1 mg/kg	71.2	13	129
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2079752)							
EM1819417-003	Anonymous	EP075-EM: Acenaphthene	83-32-9	1 mg/kg	83.1	46	138
		EP075-EM: Pyrene	129-00-0	1 mg/kg	83.9	27	169
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2079413)							
EM1819548-004	CPT_MW05_041218_2.0	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	68.7	43	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2079753)							
EM1819417-004	Anonymous	EP071-EM: C10 - C14 Fraction	----	806 mg/kg	108	53	123
		EP071-EM: C15 - C28 Fraction	----	3006 mg/kg	115	70	124
		EP071-EM: C29 - C36 Fraction	----	1584 mg/kg	106	64	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2079413)							
EM1819548-004	CPT_MW05_041218_2.0	EP074-UT: C6 - C10 Fraction	C6_C10	33 mg/kg	63.6	42	106
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2079753)							
EM1819417-004	Anonymous	EP071-EM: >C10 - C16 Fraction	----	1160 mg/kg	110	65	123
		EP071-EM: >C16 - C34 Fraction	----	3978 mg/kg	112	67	121

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2079753) - continued							
EM1819417-004	Anonymous	EP071-EM: >C34 - C40 Fraction	----	313 mg/kg	99.6	44	126
Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2081718)							
EM1819417-010	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	93.6	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	88.8	81	133
		EG020A-F: Copper	7440-50-8	0.2 mg/L	82.1	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	78.6	75	133
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	88.2	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	92.6	75	131
EG035F: Dissolved Mercury by FIMS (QCLot: 2081717)							
EM1819417-011	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	84.0	70	120
EG050F: Dissolved Hexavalent Chromium (QCLot: 2079783)							
EM1819417-011	Anonymous	EG050F: Hexavalent Chromium	18540-29-9	0.5 mg/L	93.8	59	127
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2081361)							
EB1829700-049	Anonymous	EK026SF: Total Cyanide	57-12-5	0.2 mg/L	101	70	130
EK040P: Fluoride by PC Titrator (QCLot: 2085761)							
EM1819548-019	CPT_QC301_041218	EK040P: Fluoride	16984-48-8	5 mg/L	93.4	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2081643)							
EM1819548-019	CPT_QC301_041218	EP074: 1,1-Dichloroethene	75-35-4	20 µg/L	87.4	40	124
		EP074: Trichloroethene	79-01-6	20 µg/L	77.9	54	126
EP074F: Halogenated Aromatic Compounds (QCLot: 2081643)							
EM1819548-019	CPT_QC301_041218	EP074: Chlorobenzene	108-90-7	20 µg/L	89.7	68	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2080868)							
EM1819704-001	Anonymous	EP071: C10 - C14 Fraction	----	4331 µg/L	123	50	130
		EP071: C15 - C28 Fraction	----	16952 µg/L	115	54	136
		EP071: C29 - C36 Fraction	----	8695 µg/L	122	50	142
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2081642)							
EM1819548-019	CPT_QC301_041218	EP080: C6 - C9 Fraction	----	280 µg/L	78.9	43	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2080868)							
EM1819704-001	Anonymous	EP071: >C10 - C16 Fraction	----	6292 µg/L	120	50	128
		EP071: >C16 - C34 Fraction	----	22143 µg/L	117	50	150
		EP071: >C34 - C40 Fraction	----	1677 µg/L	123	51	159
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2081642)							

Page : 20 of 20
Work Order : EM1819548
Client : AECOM Australia Pty Ltd
Project : 60582811



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2081642) - continued							
EM1819548-019	CPT_QC301_041218	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	78.1	44	122
EP080: BTEXN (QCLot: 2081642)							
EM1819548-019	CPT_QC301_041218	EP080: Benzene	71-43-2	20 µg/L	98.2	68	130
		EP080: Toluene	108-88-3	20 µg/L	91.2	72	132

ANZ FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER:		Destination Laboratory	
PROJECT MANAGER (PM):		SITE: CLIPP Groundwater Study		MOBILE:		ACS.	
PROJECT NUMBER & TASK CO: 60582811		P.O. NO.:		EMAIL REPORT TO:			
RESULTS REQUIRED (Date):		QUOTE NO.: EN/096/13		ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:				Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
COOLER SEAL (circle appropriate)							
Initial: Yes No N/A							
SAMPLE TEMPERATURE							
CHILLED: Yes No							
SAMPLE INFORMATION (note: S = Soil, W = Water)		CONTAINER INFORMATION					
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
1	CPT-MW14-031218-0.2	S	031218			15 IB	
2	CPT-MW14-031218-0.5						
3	CPT-MW14-031218-1.0						
4	CPT-MW14-031218-1.5						
5	CPT-MW14-031218-2.0						
6	CPT-MW14-031218-2.5						
7	CPT-MW14-031218-3.0						
8	CPT-MW14-031218-3.5						
9	CPT-MW14-031218-4.0						
10	CPT-MW10-031218-0.2						
11	CPT-MW10-031218-0.5						
12	CPT-MW10-031218-1.0						
13	CPT-MW10-031218-2.5						
14	CPT-MW10-031218-3.0						
15	CPT-MW10-031218-4.0						
16	QC100-031218						
17	QC300-031218						
18	QC400-031218						
19	QC500-031218						
RELINQUISHED BY:		RECEIVED BY:		Name:		Name:	
Date:		Date:		Time:		Time:	
Name:		Name:		Date:		Date:	
Time:		Time:		Corr Note No:		Transport Co:	
Name:		Name:		Date:		Date:	
Time:		Time:		Time:		Time:	

Forwarded to
Secondary Lab
Initials Date 6/12

Environmental Division
Melbourne
Work Order Reference
EM1819563

Barcode

Telephone : + 61-3-8649 9800

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.
Soil Container Codes: Jar = Unpreserved glass jar

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QC501-031218

Please freeze Ziploc bags for acid sulfate. First sample at 100 COC Page of sample times on bags.

From: [REDACTED]@aecom.com>
Sent: Thursday, 6 December 2018 9:42 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: ON HOLD - EM1819548 - AECOM 60582811 GIJPP Groundwater Study

Hi [REDACTED]

Sebastien noted that he took soil sample QC200_041218, however, forgot to include in the COC. Can you please kindly check whether the bottle was sent to lab?

Also, can you please change the following sample IDs?

- QC501_041218 to QC502_041218
- QC502_041218 to QC503_041218

For analysis, please analyse:

1 CPT_MW14_031218_0.2 = IWRG621
3 CPT_MW14_031218_1.0 = IWRG621
10 CPT_MW10_031218_0.2 = IWRG621
13 CPT_MW10_031218_2.5 = IWRG621
11 CPT_MW10_031218_0.5 = SPOCAS
14 CPT_MW10_031218_3.0 = SPOCAS
CPT_MW05_041218_0.2 = IWRG621
CPT_MW05_041218_2.0 = IWRG621
CPT_MW18_041218_0.5 = IWRG621
CPT_MW18_041218_4.0 = IWRG621
CPT_MW19_041218_0.2 = IWRG621
CPT_MW19_041218_2.0 = IWRG621
16 QC100_031218 = IWRG621
17 QC300_031218 = IWRG621 water equivalent
18 QC400_031218 = TPH(C6-C9)/BTEXN
19 QC500_031218 = TPH(C6-C9)/BTEXN
20 QC501_031218 = TPH(C6-C9)/BTEXN
QC301_041218 = IWRG621 water equivalent
QC401_041218 = TPH(C6-C9)/BTEXN
QC502_041218 = TPH(C6-C9)/BTEXN
QC503_041218 = TPH(C6-C9)/BTEXN
QC200_041218 = IWRG621 (Triplicate, please forward to Eurofins)

At standard TAT. Thanks.

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

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From: [REDACTED]
Sent: Wednesday, 5 December 2018 11:32 AM

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1819563**

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [REDACTED]	E-mail	: [REDACTED]@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60582811	Page	: 1 of 3
Order number	: ----	Quote number	: EP2016AECOMAU0014 (EN/096/18)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: GIJPP Groundwater Study		
Sampler	: SM		

Dates

Date Samples Received	: 04-Dec-2018 09:25	Issue Date	: 06-Dec-2018
Client Requested Due Date	: 14-Dec-2018	Scheduled Reporting Date	: 14-Dec-2018

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 2	Temperature	: 3.6°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 20 / 11

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA029 SPOCAS	SOIL - EA055-103 Moisture Content	SOIL - P-16 WRG 621
EM1819563-001	03-Dec-2018 00:00	CPT_MW14_031218_0.2			✓	✓
EM1819563-002	03-Dec-2018 00:00	CPT_MW14_031218_0.5	✓			
EM1819563-003	03-Dec-2018 00:00	CPT_MW14_031218_1.0			✓	✓
EM1819563-004	03-Dec-2018 00:00	CPT_MW14_031218_1.5	✓			
EM1819563-005	03-Dec-2018 00:00	CPT_MW14_031218_2.0	✓			
EM1819563-006	03-Dec-2018 00:00	CPT_MW14_031218_2.5	✓			
EM1819563-007	03-Dec-2018 00:00	CPT_MW14_031218_3.0	✓			
EM1819563-008	03-Dec-2018 00:00	CPT_MW14_031218_3.5	✓			
EM1819563-009	03-Dec-2018 00:00	CPT_MW14_031218_4.0	✓			
EM1819563-010	03-Dec-2018 00:00	CPT_MW10_031218_0.2			✓	✓
EM1819563-011	03-Dec-2018 00:00	CPT_MW10_031218_0.5		✓		
EM1819563-012	03-Dec-2018 00:00	CPT_MW10_031218_1.0	✓			
EM1819563-013	03-Dec-2018 00:00	CPT_MW10_031218_2.5			✓	✓
EM1819563-014	03-Dec-2018 00:00	CPT_MW10_031218_3.0		✓		
EM1819563-015	03-Dec-2018 00:00	CPT_MW10_031218_4.0	✓			
EM1819563-016	03-Dec-2018 00:00	QC100_031218			✓	✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EA005P pH (PCT)	WATER - EG050F Dissolved Hexavalent Chromium	WATER - EK040-P Fluoride (PCT)
EM1819563-017	03-Dec-2018 00:00	QC300_031218	✓	✓	✓

Laboratory sample ID	Client sampling date / time	Client sample ID
EM1819563-017	03-Dec-2018 00:00	QC300_031218
EM1819563-018	03-Dec-2018 00:00	QC400_031218
EM1819563-019	03-Dec-2018 00:00	QC500_031218
EM1819563-020	03-Dec-2018 00:00	QC501_031218

WATER - EG020F	✓	Dissolved Metals by ICP/MS
WATER - EG035F	✓	Dissolved Mercury
WATER - EP074A	✓	VOC - MAH's
WATER - EP074DEFG	✓	VOC - Fumigants, Hal Aliphatics, Hal Aromatics,
WATER - W-11	✓	OC/PCB
WATER - W-18		TRH/C6 - C9/BTEXN
WATER - W-24	✓	TRH/BTEXN/PAH/Phenols

Method	Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
					Date	Evaluation	Date	Evaluation
EA005-P: pH by PC Titrator								
QC300 031218	Clear Plastic Bottle - Natural	----	03-Dec-2018	04-Dec-2018	✖	06-Dec-2018	✖	

[illegible]

CERTIFICATE OF ANALYSIS

Work Order : **EM1819563**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60582811
Order number : 60582811
C-O-C number : ----
Sampler : SM
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 20
No. of samples analysed : 11

Page : 1 of 21
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 04-Dec-2018 09:25
Date Analysis Commenced : 06-Dec-2018
Issue Date : 17-Dec-2018 09:07



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
[REDACTED]	Non-metals prep supervisor	Melbourne Inorganics, Springvale, VIC
[REDACTED]	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
[REDACTED]	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
[REDACTED]	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP080: Particular sample EM1819563_19 shows positive hit of C6-C9/C6-C10 band due to 2-Butanone (MEK) and Cyclohexanone. Confirmed by re-analysis.
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- EK040-P: EM1819667 #4 Poor matrix spike recovery for Fluoride due to matrix effects.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m³ in-situ soil, multiply reported results x wet bulk density of soil in t/m³.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID				
				CPT_MW14_031218_0.2	CPT_MW14_031218_1.0	CPT_MW10_031218_0.2	CPT_MW10_031218_0.5	CPT_MW10_031218_2.5
Client sampling date / time				03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00
Compound	CAS Number	LOR	Unit	EM1819563-001	EM1819563-003	EM1819563-010	EM1819563-011	EM1819563-013
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	5.1	7.0	4.2	----	7.3
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	4.3	----
pH OX (23B)	----	0.1	pH Unit	----	----	----	4.1	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	57	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	----	----	82	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	----	----	24	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	----	----	0.092	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	----	----	0.131	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	----	----	0.039	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	----	----	<0.020	----
Peroxide Sulfur (23De)	----	0.020	% S	----	----	----	<0.020	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	----	----	<0.020	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	----	----	<10	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	----	----	0.033	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	----	----	0.033	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	----	----	<0.020	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	----	----	<10	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	----	----	<0.020	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	----	----	0.085	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	----	0.085	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	----	<0.020	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	----	<10	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	----	<0.020	----
EA029-G: Retained Acidity								
HCl Extractable Sulfur (20Be)	----	0.020	% S	----	----	----	<0.020	----
Net Acid Soluble Sulfur (20Je)	----	0.020	% S	----	----	----	<0.020	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW14_031218_ 0.2	CPT_MW14_031218_ 1.0	CPT_MW10_031218_ 0.2	CPT_MW10_031218_ 0.5	CPT_MW10_031218_ 2.5
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1819563-001	EM1819563-003	EM1819563-010	EM1819563-011	EM1819563-013
				Result	Result	Result	Result	Result	Result
EA029-G: Retained Acidity - Continued									
acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	----	----	----	----	<10	----
sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.020	% pyrite S	----	----	----	----	<0.020	----
EA029-H: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	----	----	----	----	1.5	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	----	0.09	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	----	57	----
Liming Rate	----	1	kg CaCO3/t	----	----	----	----	4	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	----	----	0.09	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	----	----	57	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	----	----	4	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		16.1	16.5	12.2	----	15.2
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	14	<5	----	----	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----	<1
Copper	7440-50-8	5	mg/kg	<5	11	<5	----	----	<5
Lead	7439-92-1	5	mg/kg	6	12	6	----	----	<5
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	----	----	<2
Nickel	7440-02-0	2	mg/kg	3	15	<2	----	----	<2
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	----	----	<5
Silver	7440-22-4	2	mg/kg	<2	<2	<2	----	----	<2
Tin	7440-31-5	5	mg/kg	<5	<5	<5	----	----	<5
Zinc	7440-66-6	5	mg/kg	5	7	<5	----	----	<5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----	<0.5
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg	2	<1	2	----	----	<1
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg	120	240	50	----	----	140
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	----	----	<0.1

Client sampling date / time				03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00
Compound	CAS Number	LOR	Unit	EM1819563-001	EM1819563-003	EM1819563-010	EM1819563-011	EM1819563-013
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	----	<1
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	<0.02	----	<0.02
1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	<0.01	----	<0.01
Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	<0.4	----	<0.4
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	<0.02	----	<0.02
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	<0.01	----	<0.01
Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	<0.02	----	<0.02
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	<0.01	----	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	<0.01	----	<0.01
1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	<0.02	----	<0.02
Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	<0.02	----	<0.02
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	<0.04	----	<0.04
Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	<0.02	----	<0.02
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	<0.01	----	<0.01
1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	<0.02	----	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	<0.02	----	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	<0.02	----	<0.02
1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	<0.02	----	<0.02
1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	<0.02	----	<0.02
1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	<0.01	----	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	<0.01	<0.01	----	<0.01
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	<0.01	<0.01	----	<0.01
EP075A: Phenolic Compounds (Halogenated)								



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW14_031218_ 0.2	CPT_MW14_031218_ 1.0	CPT_MW10_031218_ 0.2	CPT_MW10_031218_ 0.5	CPT_MW10_031218_ 2.5
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1819563-001	EM1819563-003	EM1819563-010	EM1819563-011	EM1819563-013
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Halogenated) - Continued									
2-Chlorophenol	95-57-8	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
2,4-Dichlorophenol	120-83-2	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
2,6-Dichlorophenol	87-65-0	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Pentachlorophenol	87-86-5	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
^ Sum of Phenols (halogenated)	----	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		<1	<1	<1	----	<1
2-Methylphenol	95-48-7	1	mg/kg		<1	<1	<1	----	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	----	<1
2-Nitrophenol	88-75-5	1	mg/kg		<1	<1	<1	----	<1
2,4-Dimethylphenol	105-67-9	1	mg/kg		<1	<1	<1	----	<1
2,4-Dinitrophenol	51-28-5	5	mg/kg		<5	<5	<5	----	<5
4-Nitrophenol	100-02-7	5	mg/kg		<5	<5	<5	----	<5
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg		<5	<5	<5	----	<5
Dinoseb	88-85-7	5	mg/kg		<5	<5	<5	----	<5
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg		<5	<5	<5	----	<5
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		<1	<1	<1	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW14_031218_ 0.2	CPT_MW14_031218_ 1.0	CPT_MW10_031218_ 0.2	CPT_MW10_031218_ 0.5	CPT_MW10_031218_ 2.5
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1819563-001	EM1819563-003	EM1819563-010	EM1819563-011	EM1819563-013
					Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	----	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	----	1.2
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
gamma-BHC	58-89-9	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
Aldrin	309-00-2	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
4.4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
Endrin	72-20-8	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
4.4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
4.4'-DDT	50-29-3	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
Methoxychlor	72-43-5	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
^ Sum of organochlorine pesticides	----	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW14_031218_ 0.2	CPT_MW14_031218_ 1.0	CPT_MW10_031218_ 0.2	CPT_MW10_031218_ 0.5	CPT_MW10_031218_ 2.5
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1819563-001	EM1819563-003	EM1819563-010	EM1819563-011	EM1819563-013
					Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued									
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	<0.05
^ Chlordane	57-74-9	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		<0.03	<0.03	<0.03	----	<0.03
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	<50
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	<10
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	<50
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	----	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	<10
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		115	96.4	98.6	----	97.4
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		80.6	86.7	86.4	----	80.6
Toluene-D8	2037-26-5	0.1	%		77.4	83.0	82.2	----	77.1
4-Bromofluorobenzene	460-00-4	0.1	%		83.3	89.7	87.0	----	88.4
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		99.5	101	105	----	108
2-Chlorophenol-D4	93951-73-6	0.025	%		74.0	76.2	79.4	----	80.8
2,4,6-Tribromophenol	118-79-6	0.025	%		66.2	66.8	70.1	----	71.6
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		85.9	86.3	93.0	----	93.0
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%		77.8	77.6	83.5	----	83.1
2-Fluorobiphenyl	321-60-8	0.025	%		88.8	88.5	92.5	----	93.2



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW14_031218_ 0.2	CPT_MW14_031218_ 1.0	CPT_MW10_031218_ 0.2	CPT_MW10_031218_ 0.5	CPT_MW10_031218_ 2.5
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1819563-001	EM1819563-003	EM1819563-010	EM1819563-011	EM1819563-013
					Result	Result	Result	Result	Result
EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued									
Anthracene-d10	1719-06-8	0.025	%		88.8	88.1	92.2	----	92.5
4-Terphenyl-d14	1718-51-0	0.025	%		91.4	91.2	94.0	----	93.7



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW10_031218_3.0	QC100_031218	----	----	----
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM1819563-014	EM1819563-016	-----	-----	-----
				Result	Result		----	----	----
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit		----	7.2	----	----	----
EA029-A: pH Measurements									
pH KCl (23A)	----	0.1	pH Unit		6.0	----	----	----	----
pH OX (23B)	----	0.1	pH Unit		5.7	----	----	----	----
EA029-B: Acidity Trail									
Titratable Actual Acidity (23F)	----	2	mole H+ / t		4	----	----	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t		12	----	----	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t		8	----	----	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S		<0.020	----	----	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S		<0.020	----	----	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S		<0.020	----	----	----	----
EA029-C: Sulfur Trail									
KCl Extractable Sulfur (23Ce)	----	0.020	% S		<0.020	----	----	----	----
Peroxide Sulfur (23De)	----	0.020	% S		0.027	----	----	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S		0.027	----	----	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t		17	----	----	----	----
EA029-D: Calcium Values									
KCl Extractable Calcium (23Vh)	----	0.020	% Ca		0.021	----	----	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca		0.021	----	----	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca		<0.020	----	----	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t		<10	----	----	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S		<0.020	----	----	----	----
EA029-E: Magnesium Values									
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg		0.035	----	----	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg		0.037	----	----	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg		<0.020	----	----	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t		<10	----	----	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S		<0.020	----	----	----	----
EA029-H: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-		1.5	----	----	----	----
Net Acidity (sulfur units)	----	0.02	% S		0.03	----	----	----	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW10_031218_3.0	QC100_031218	----	----	----
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM1819563-014	EM1819563-016	-----	-----	-----
				Result	Result		----	----	----
EA029-H: Acid Base Accounting - Continued									
Net Acidity (acidity units)	----	10	mole H+ / t		21	----	----	----	----
Liming Rate	----	1	kg CaCO3/t		2	----	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		0.03	----	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		21	----	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t		2	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		----	16.0	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		----	<5	----	----	----
Cadmium	7440-43-9	1	mg/kg		----	<1	----	----	----
Copper	7440-50-8	5	mg/kg		----	<5	----	----	----
Lead	7439-92-1	5	mg/kg		----	<5	----	----	----
Molybdenum	7439-98-7	2	mg/kg		----	<2	----	----	----
Nickel	7440-02-0	2	mg/kg		----	3	----	----	----
Selenium	7782-49-2	5	mg/kg		----	<5	----	----	----
Silver	7440-22-4	2	mg/kg		----	<2	----	----	----
Tin	7440-31-5	5	mg/kg		----	<5	----	----	----
Zinc	7440-66-6	5	mg/kg		----	6	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		----	<0.5	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg		----	<1	----	----	----
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg		----	80	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	<0.1	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg		----	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	----	----	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW10_031218_3.0	QC100_031218	----	----	----
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM1819563-014	EM1819563-016	-----	-----	-----
				Result	Result		----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
Styrene	100-42-5	0.5	mg/kg		----	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg		----	<0.2	----	----	----
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	----	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	<1	----	----	----
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		----	<0.02	----	----	----
1,1-Dichloroethene	75-35-4	0.01	mg/kg		----	<0.01	----	----	----
Methylene chloride	75-09-2	0.4	mg/kg		----	<0.4	----	----	----
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg		----	<0.02	----	----	----
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg		----	<0.01	----	----	----
Chloroform	67-66-3	0.02	mg/kg		----	<0.02	----	----	----
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg		----	<0.01	----	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg		----	<0.01	----	----	----
1,2-Dichloroethane	107-06-2	0.02	mg/kg		----	<0.02	----	----	----
Trichloroethene	79-01-6	0.02	mg/kg		----	<0.02	----	----	----
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg		----	<0.04	----	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg		----	<0.02	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg		----	<0.01	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg		----	<0.02	----	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg		----	<0.02	----	----	----
Chlorobenzene	108-90-7	0.02	mg/kg		----	<0.02	----	----	----
1,4-Dichlorobenzene	106-46-7	0.02	mg/kg		----	<0.02	----	----	----
1,2-Dichlorobenzene	95-50-1	0.02	mg/kg		----	<0.02	----	----	----
1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg		----	<0.01	----	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		----	<0.01	----	----	----
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg		----	<0.01	----	----	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		----	<0.03	----	----	----
2,4-Dichlorophenol	120-83-2	0.03	mg/kg		----	<0.03	----	----	----
2,6-Dichlorophenol	87-65-0	0.03	mg/kg		----	<0.03	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg		----	<0.03	----	----	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW10_031218_3.0	QC100_031218	----	----	----
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM1819563-014	EM1819563-016	-----	-----	-----
				Result	Result		----	----	----
EP075A: Phenolic Compounds (Halogenated) - Continued									
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		----	<0.05	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		----	<0.05	----	----	----
2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg		----	<0.03	----	----	----
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg		----	<0.05	----	----	----
Pentachlorophenol	87-86-5	0.2	mg/kg		----	<0.2	----	----	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg		----	<0.03	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		----	<1	----	----	----
2-Methylphenol	95-48-7	1	mg/kg		----	<1	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	<1	----	----	----
2-Nitrophenol	88-75-5	1	mg/kg		----	<1	----	----	----
2.4-Dimethylphenol	105-67-9	1	mg/kg		----	<1	----	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg		----	<5	----	----	----
4-Nitrophenol	100-02-7	5	mg/kg		----	<5	----	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg		----	<5	----	----	----
Dinoseb	88-85-7	5	mg/kg		----	<5	----	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg		----	<5	----	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		----	<1	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg		----	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	----	----	----

EP080/071: Total Petroleum Hydrocarbons



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW10_031218_3.0	QC100_031218	----	----	----
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM1819563-014	EM1819563-016	-----	-----	-----
				Result	Result		----	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		----	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg		----	<50	----	----	----
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	----	----	----
C15 - C28 Fraction	----	100	mg/kg		----	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg		----	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	114	----	----	----
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		----	80.7	----	----	----
Toluene-D8	2037-26-5	0.1	%		----	79.9	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		----	87.1	----	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		----	104	----	----	----
2-Chlorophenol-D4	93951-73-6	0.025	%		----	76.9	----	----	----
2,4,6-Tribromophenol	118-79-6	0.025	%		----	66.2	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		----	89.6	----	----	----
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%		----	78.4	----	----	----
2-Fluorobiphenyl	321-60-8	0.025	%		----	91.6	----	----	----
Anthracene-d10	1719-06-8	0.025	%		----	89.5	----	----	----
4-Terphenyl-d14	1718-51-0	0.025	%		----	90.1	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC300_031218	QC400_031218	QC500_031218	QC501_031218	----
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1819563-017	EM1819563-018	EM1819563-019	EM1819563-020	-----
					Result	Result	Result	Result	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		6.58	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Silver	7440-22-4	0.001	mg/L		<0.001	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG050F: Dissolved Hexavalent Chromium									
Hexavalent Chromium	18540-29-9	0.01	mg/L		<0.01	----	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		0.5	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
^ Total Polychlorinated biphenyls	----	1	µg/L		<1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4,4'-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
4,4'-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
4,4'-DDT	50-29-3	2.0	µg/L		<2.0	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	5	µg/L		<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Vinyl chloride	75-01-4	50	µg/L		<50	----	----	----	----

EP075(SIM)B: Polynuclear Aromatic Hydrocarbons

EP080: BTEXN



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC300_031218	QC400_031218	QC500_031218	QC501_031218	----
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	03-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1819563-017	EM1819563-018	EM1819563-019	EM1819563-020	-----
					Result	Result	Result	Result	----
EP080: BTEXN - Continued									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		77.9	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		77.1	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		81.5	----	----	----	----
EP074S: VOC Surrogates									
1,2-Dichloroethane-D4	17060-07-0	5	%		84.3	----	----	----	----
Toluene-D8	2037-26-5	5	%		78.2	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		88.2	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		28.3	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		66.2	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%		49.8	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		73.5	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		73.6	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		70.3	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		102	113	105	104	----
Toluene-D8	2037-26-5	2	%		81.5	87.9	100	84.2	----
4-Bromofluorobenzene	460-00-4	2	%		99.2	107	102	102	----



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Sub-Matrix: SOIL		□□□□ □ □□ □ s □	
Compound	CAS Number	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1,2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	28	134
2-Chlorophenol-D4	93951-73-6	27	123
2,4,6-Tribromophenol	118-79-6	25	149
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	29	125
1,2-Dichlorobenzene-D4	2199-69-1	31	117
2-Fluorobiphenyl	321-60-8	44	136
Anthracene-d10	1719-06-8	53	133
4-Terphenyl-d14	1718-51-0	59	141

Sub-Matrix: WATER		□□□□ □ □□ □ s □	
Compound	CAS Number	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	125
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	117
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	51	127
EP074S: VOC Surrogates			
1,2-Dichloroethane-D4	17060-07-0	72	132
Toluene-D8	2037-26-5	77	132
4-Bromofluorobenzene	460-00-4	67	131
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129



Sub-Matrix: WATER		□□□□□ □□□□ □ s □	
Compound	CAS Number	□□%	□□ □
EP080S: TPH(V)/BTEX Surrogates - Continued			
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

QUALITY CONTROL REPORT

Work Order	: EM1819563	Page	: 1 of 21
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60582811	Date Samples Received	: 04-Dec-2018
Order number	: 60582811	Date Analysis Commenced	: 06-Dec-2018
C-O-C number	: ----	Issue Date	: 17-Dec-2018
Sampler	: SM		
Site	: GIJPP Groundwater Study		
Quote number	: EN/096/18		
No. of samples received	: 20		
No. of samples analysed	: 11		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Non-metals prep supervisor
Senior Acid Sulfate Soil Chemist
Senior Inorganic Chemist
2IC Organic Chemist
2IC Organic Chemist
Senior Inorganic Instrument Chemist

Melbourne Inorganics, Springvale, VIC
Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2079795)									
EM1819417-001	Anonymous	EA001: pH (CaCl2)	----	0.1	pH Unit	5.7	5.8	0.00	0% - 20%
EM1819563-001	CPT_MW14_031218_0.2	EA001: pH (CaCl2)	----	0.1	pH Unit	5.1	5.1	0.00	0% - 20%
EA029-A: pH Measurements (QC Lot: 2084885)									
EB1829699-007	Anonymous	EA029: pH KCl (23A)	----	0.1	pH Unit	5.5	5.6	1.80	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	6.4	6.4	0.00	0% - 20%
EB1829699-052	Anonymous	EA029: pH KCl (23A)	----	0.1	pH Unit	5.6	5.9	5.22	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	6.6	6.6	0.00	0% - 20%
EA029-B: Acidity Trail (QC Lot: 2084885)									
EB1829699-007	Anonymous	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	4	4	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	7	7	0.00	No Limit
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	3	3	0.00	No Limit
EB1829699-052	Anonymous	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	3	2	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	<2	0.00	No Limit
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	<2	0.00	No Limit
EA029-C: Sulfur Trail (QC Lot: 2084885)									



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA029-C: Sulfur Trail (QC Lot: 2084885) - continued									
EB1829699-007	Anonymous	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EB1829699-052	Anonymous	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-D: Calcium Values (QC Lot: 2084885)									
EB1829699-007	Anonymous	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.033	0.032	0.00	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	0.034	0.033	0.00	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EB1829699-052	Anonymous	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.044	0.042	3.75	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	0.050	0.046	8.08	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-E: Magnesium Values (QC Lot: 2084885)									
EB1829699-007	Anonymous	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	0.026	0.027	0.00	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	0.030	0.030	0.00	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EB1829699-052	Anonymous	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	0.154	0.150	2.23	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	0.189	0.173	8.95	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	0.035	0.022	44.4	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	0.046	0.030	44.4	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	29	18	44.4	No Limit
EA029-H: Acid Base Accounting (QC Lot: 2084885)									
EB1829699-007	Anonymous	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA029-H: Acid Base Accounting (QC Lot: 2084885) - continued									
EB1829699-007	Anonymous	EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EB1829699-052	Anonymous	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
		EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2081029)							
EM1819563-001	CPT_MW14_031218_0.2	EA055: Moisture Content	----	0.1	%	16.1	16.2	0.00	0% - 50%
EM1819636-009	Anonymous	EA055: Moisture Content	----	0.1	%	4.3	4.3	0.00	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 2088379)									
EM1819563-001	CPT_MW14_031218_0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.00	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	6	6	0.00	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	5	<5	0.00	No Limit
EM1819875-029	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	7	14.6	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	5	<5	0.00	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2088378)									
EM1819563-001	CPT_MW14_031218_0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1819875-029	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2089383)									



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2089383) - continued									
EM1819561-012	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1819671-004	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2090439)									
EB1829833-001	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.00	No Limit
EM1819563-003	CPT_MW14_031218_1.0	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.00	No Limit
EK040T: Fluoride Total (QC Lot: 2082099)									
EM1819563-001	CPT_MW14_031218_0.2	EK040T: Fluoride	16984-48-8	40	mg/kg	120	100	18.5	No Limit
EM1819646-013	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	40	50	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2084964)									
EM1819561-012	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1819671-006	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2079731)									
EM1819563-001	CPT_MW14_031218_0.2	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2079731)									
EM1819563-001	CPT_MW14_031218_0.2	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP074I: Volatile Halogenated Compounds (QC Lot: 2079731)									
EM1819563-001	CPT_MW14_031218_0.2	EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074I: Volatile Halogenated Compounds (QC Lot: 2079731) - continued									
EM1819563-001	CPT_MW14_031218_0.2	EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.00	No Limit
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.00	No Limit
EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2084962)									
EM1819561-012	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-9 0-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EM1819671-006	Anonymous	EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EM1819561-012	Anonymous	EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-9 0-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2084962)									
EM1819561-012	Anonymous	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.00	No Limit
EM1819671-006	Anonymous	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2084962) - continued									
EM1819671-006	Anonymous	EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.00	No Limit
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2084962)									
EM1819561-012	Anonymous	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			207-08-9						
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1819671-006	Anonymous	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			207-08-9						
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075I: Organochlorine Pesticides (QC Lot: 2084962)									
EM1819561-012	Anonymous	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075I: Organochlorine Pesticides (QC Lot: 2084962) - continued									
EM1819561-012	Anonymous	EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4,4'-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EM1819671-006	Anonymous	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4,4'-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2079731)							
EM1819563-001	CPT_MW14_031218_0.2	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2084963)									
EM1819561-012	Anonymous	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	140	<100	34.3	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM1819671-006	Anonymous	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2079731)									
EM1819563-001	CPT_MW14_031218_0.2	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2084963)									
EM1819561-012	Anonymous	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	170	<100	54.5	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM1819671-006	Anonymous	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA005P: pH by PC Titrator (QC Lot: 2090359)									
EM1819709-011	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.75	7.73	0.258	0% - 20%
EM1819709-006	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	9.67	9.70	0.310	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2090705)									
EM1819563-017	QC300_031218	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1819810-010	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.004	0.003	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.020	0.020	0.00	0% - 20%
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.018	0.017	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2090705) - continued									
EM1819810-010	Anonymous	EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2090706)									
EM1819811-024	Anonymous	EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.010	0.021	70.6	No Limit
EM1819563-017	QC300_031218	EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 2090707)									
EM1819563-017	QC300_031218	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1819810-010	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 2079783)									
EM1819417-010	Anonymous	EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK040P: Fluoride by PC Titrator (QC Lot: 2090360)									
EM1819667-004	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	1.1	1.4	25.1	0% - 50%
EM1819667-018	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	245	248	1.22	0% - 20%
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2081643)									
EM1819522-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
EM1819716-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2081643)									
EM1819522-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Methylene chloride	75-09-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
EM1819716-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Methylene chloride	75-09-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2081643) - continued									
EM1819716-001	Anonymous	EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2081643)									
EM1819522-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
EM1819716-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2081643)									
EM1819522-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	8	6	18.2	No Limit
EM1819716-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2081642)									
EM1819522-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1819716-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2081642)									
EM1819522-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1819716-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2081642)									
EM1819522-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
EM1819716-001	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
EM1819716-001	Anonymous	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EA029-A: pH Measurements (QCLot: 2084885)								
EA029: pH KCl (23A)	----	0.1	pH Unit	<0.1	4.5 pH Unit	97.8	70	130
EA029: pH OX (23B)	----	0.1	pH Unit	<0.1	4.5 pH Unit	100	70	130
EA029-B: Acidity Trail (QCLot: 2084885)								
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	24.6 mole H+ / t	101	70	130
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	29.1 mole H+ / t	89.9	70	130
EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	----	----	----	----
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029-C: Sulfur Trail (QCLot: 2084885)								
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.052 % S	82.3	70	130
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.145 % S	98.6	70	130
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-D: Calcium Values (QCLot: 2084885)								
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.151 % Ca	98.3	70	130
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.296 % Ca	95.8	70	130
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values (QCLot: 2084885)								
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.176 % Mg	91.0	70	130
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.175 % Mg	105	70	130
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----
EA029-G: Retained Acidity (QCLot: 2084885)								
EA029: Net Acid Soluble Sulfur (20Je)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: HCl Extractable Sulfur (20Be)	----	0.02	% S	<0.020	0.027 % S	87.5	70	130
EA029-H: Acid Base Accounting (QCLot: 2084885)								
EA029: ANC Fineness Factor	----	0.5	-	<0.5	----	----	----	----



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EA029-H: Acid Base Accounting (QCLot: 2084885) - continued								
EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----
EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----
EG005T: Total Metals by ICP-AES (QCLot: 2088379)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	94.3	78	107
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	92.3	76	108
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	102	78	108
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	90.4	78	106
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	96.6	78	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	96.5	80	109
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	98.5	92	110
EG005T: Silver	7440-22-4	2	mg/kg	<2	2.1 mg/kg	82.4	80	108
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.2 mg/kg	103	78	117
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	95.0	79	110
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2088378)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	90.8	77	104
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2089383)								
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	77.2	75	112
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2090439)								
EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	20 mg/kg	89.2	80	107
EK040T: Fluoride Total (QCLot: 2082099)								
EK040T: Fluoride	16984-48-8	40	mg/kg	<40	400 mg/kg	86.8	75	110
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2084964)								
EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	99.2	63	118
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2079731)								
EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	2.1 mg/kg	96.2	68	117
EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	2.1 mg/kg	95.6	67	118
EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.1 mg/kg	90.9	66	119
EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	4.2 mg/kg	91.6	66	115
	106-42-3							
EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	2.1 mg/kg	94.2	71	115
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2.1 mg/kg	93.2	68	113
EP074H: Naphthalene (QCLot: 2079731)								
EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	0.6 mg/kg	107	75	113



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP074I: Volatile Halogenated Compounds (QCLot: 2079731)								
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	89.7	51	136
EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	93.0	56	125
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	93.4	70	117
EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	95.0	61	122
EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	95.9	70	114
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	92.7	69	112
EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	95.0	62	124
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	93.6	56	126
EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	99.7	73	118
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	93.9	66	117
EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	101	76	115
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	90.4	62	120
EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	0.1 mg/kg	92.6	71	118
EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	97.2	69	119
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	88.0	47	125
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	94.0	73	114
EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	90.4	66	114
EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	93.7	73	110
EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	84.6	54	121
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2084962)								
EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	2 mg/kg	96.8	69	123
EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	2 mg/kg	99.6	55	128
EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	2 mg/kg	111	70	123
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	2 mg/kg	113	56	128
EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	2 mg/kg	114	66	126
EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	2 mg/kg	111	60	126
EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	4 mg/kg	98.6	65	124
EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/5	0.05	mg/kg	<0.05	8 mg/kg	73.5	64	128
	8-90-2							
EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	4 mg/kg	101	43	127
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2084962)								
EP075-EM: Phenol	108-95-2	1	mg/kg	<1	2 mg/kg	99.4	58	126
EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	2 mg/kg	99.5	65	126
EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	4 mg/kg	99.3	64	123
EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	2 mg/kg	99.6	53	128
EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	2 mg/kg	101	56	136
EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	12 mg/kg	119	41	156
EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	12 mg/kg	92.4	48	130
EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	12 mg/kg	85.9	47	125



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2084962) - continued								
EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	12 mg/kg	82.6	51	123
EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<5	10 mg/kg	94.3	36	137
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2084962)								
EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	2 mg/kg	113	70	123
EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	2 mg/kg	104	70	130
EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	2 mg/kg	117	68	131
EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	2 mg/kg	105	72	128
EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	2 mg/kg	106	75	128
EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	2 mg/kg	109	55	127
EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	2 mg/kg	105	75	128
EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	2 mg/kg	107	73	130
EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	2 mg/kg	116	72	131
EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	2 mg/kg	117	77	133
EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	4 mg/kg	111	76	133
EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	2 mg/kg	112	70	130
EP075-EM: Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	2 mg/kg	106	72	134
EP075-EM: Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	2 mg/kg	107	72	135
EP075-EM: Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	2 mg/kg	106	71	134
EP075I: Organochlorine Pesticides (QCLot: 2084962)								
EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	2 mg/kg	96.0	71	122
EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	2 mg/kg	84.1	70	126
EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	2 mg/kg	107	70	130
EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	2 mg/kg	95.4	71	129
EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	2 mg/kg	108	74	128
EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	2 mg/kg	94.9	72	126
EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	2 mg/kg	98.1	72	127
EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	2 mg/kg	88.0	73	129
EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	2 mg/kg	83.3	72	131
EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	2 mg/kg	84.8	73	130
EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	2 mg/kg	92.2	64	137
EP075-EM: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	2 mg/kg	98.5	73	131
EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	2 mg/kg	95.9	72	132
EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	2 mg/kg	110	42	160
EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	2 mg/kg	73.2	55	148
EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	2 mg/kg	105	73	132
EP075-EM: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	2 mg/kg	106	75	134
EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	2 mg/kg	95.9	73	133
EP075-EM: 4,4`-DDT	50-29-3	0.05	mg/kg	<0.05	2 mg/kg	117	67	133

Sub-Matrix: **WATER**



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2081950) - continued								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	74.7	48	124
EP068A: Organochlorine Pesticides (OC) (QCLot: 2081947)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	2.5 µg/L	90.8	56	118
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	2.5 µg/L	105	54	120
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	2.5 µg/L	85.9	54	118
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	2.5 µg/L	81.2	52	124
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	2.5 µg/L	89.2	55	121
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	2.5 µg/L	80.0	55	122
EP068: 4,4`-DDE	72-55-9	0.5	µg/L	<0.5	2.5 µg/L	90.0	52	122
EP068: 4,4`-DDD	72-54-8	0.5	µg/L	<0.5	2.5 µg/L	98.0	55	125
EP068: 4,4`-DDT	50-29-3	2	µg/L	<2.0	2.5 µg/L	117	51	132
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2081643)								
EP074: Styrene	100-42-5	5	µg/L	<5	20 µg/L	106	79	114
EP074E: Halogenated Aliphatic Compounds (QCLot: 2081643)								
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	200 µg/L	102	64	139
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	20 µg/L	99.3	65	124
EP074: Methylene chloride	75-09-2	5	µg/L	<5	20 µg/L	103	81	144
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	20 µg/L	98.6	73	121
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	20 µg/L	105	78	120
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	20 µg/L	93.8	68	116
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	20 µg/L	90.4	66	119
EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	20 µg/L	110	79	118
EP074: Trichloroethene	79-01-6	5	µg/L	<5	20 µg/L	97.7	70	120
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	20 µg/L	104	87	114
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	20 µg/L	97.7	75	119
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	20 µg/L	93.5	75	112
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	20 µg/L	106	81	125
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	20 µg/L	96.1	63	126
EP074F: Halogenated Aromatic Compounds (QCLot: 2081643)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	20 µg/L	104	82	114
EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	20 µg/L	108	76	118
EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	20 µg/L	106	82	112
EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	20 µg/L	101	62	119
EP074G: Trihalomethanes (QCLot: 2081643)								
EP074: Chloroform	67-66-3	5	µg/L	<5	20 µg/L	106	79	119
EP075(SIM)A: Phenolic Compounds (QCLot: 2081949)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	32.9	20	51
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	74.8	46	103



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)A: Phenolic Compounds (QCLot: 2081949) - continued								
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	68.3	43	98
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	61.8	41	90
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	68.8	44	114
EP075(SIM): 2,4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	76.1	43	115
EP075(SIM): 2,4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	77.5	48	111
EP075(SIM): 2,6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	82.6	50	116
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	81.9	49	110
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	80.6	48	113
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	80.4	47	115
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	49.5	48	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2081949)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	81.3	48	110
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	85.4	50	117
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	77.2	53	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	78.2	54	118
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	78.8	59	119
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	78.0	51	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	79.5	61	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	77.6	56	120
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	80.2	53	120
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	79.4	57	122
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	83.5	56	131
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	83.3	59	124
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	82.5	54	124
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	77.3	55	124
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	76.6	54	124
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	76.4	56	124
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2081642)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	106	65	126
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2081948)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	4331 µg/L	93.3	51	136
EP071: C15 - C28 Fraction	----	100	µg/L	<100	16952 µg/L	93.9	58	139
EP071: C29 - C36 Fraction	----	50	µg/L	<50	8695 µg/L	90.0	57	134
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2081642)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	106	64	124
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2081948)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	6292 µg/L	93.3	55	134



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
CAS Number	LOR	Unit						
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2081948) - continued								
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	22143 µg/L	93.0	58	135
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1677 µg/L	86.6	57	137
EP080: BTEXN (QCLot: 2081642)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	106	69	123
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	105	73	124
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	105	71	125
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	105	72	129
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	111	76	129
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	94.6	70	125

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2088379)							
EM1819563-003	CPT_MW14_031218_1.0	EG005T: Arsenic	7440-38-2	50 mg/kg	86.5	78	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	95.2	84	116
		EG005T: Copper	7440-50-8	50 mg/kg	95.0	82	124
		EG005T: Lead	7439-92-1	50 mg/kg	93.0	76	124
		EG005T: Molybdenum	7439-98-7	50 mg/kg	97.2	79	117
		EG005T: Nickel	7440-02-0	50 mg/kg	95.0	78	120
		EG005T: Selenium	7782-49-2	50 mg/kg	84.9	71	125
		EG005T: Zinc	7440-66-6	50 mg/kg	94.5	74	128
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2088378)							
EM1819563-003	CPT_MW14_031218_1.0	EG035T: Mercury	7439-97-6	5 mg/kg	93.6	76	116
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2089383)							
EM1819561-014	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	40 mg/kg	62.9	58	114
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2090439)							
EB1829833-002	Anonymous	EK026SF: Total Cyanide	57-12-5	20 mg/kg	90.2	77	113
EK040T: Fluoride Total (QCLot: 2082099)							
EM1819563-003	CPT_MW14_031218_1.0	EK040T: Fluoride	16984-48-8	400 mg/kg	87.2	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2084964)							
EM1819563-001	CPT_MW14_031218_0.2	EP066-EM: Total Polychlorinated biphenyls	----	1 mg/kg	97.2	36	152



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2079731)							
EM1819563-003	CPT_MW14_031218_1.0	EP074-UT: Benzene	71-43-2	2 mg/kg	84.0	50	138
		EP074-UT: Toluene	108-88-3	2 mg/kg	83.0	56	134
EP074I: Volatile Halogenated Compounds (QCLot: 2079731)							
EM1819563-003	CPT_MW14_031218_1.0	EP074-UT: 1,1-Dichloroethene	75-35-4	2 mg/kg	84.1	26	141
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	78.4	50	134
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	81.8	28	134
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2084962)							
EM1819561-014	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	1 mg/kg	112	34	118
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	1 mg/kg	107	41	139
		EP075-EM: Pentachlorophenol	87-86-5	1 mg/kg	74.8	10	144
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2084962)							
EM1819561-014	Anonymous	EP075-EM: Phenol	108-95-2	1 mg/kg	106	32	134
		EP075-EM: 2-Nitrophenol	88-75-5	1 mg/kg	98.8	13	129
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2084962)							
EM1819561-014	Anonymous	EP075-EM: Acenaphthene	83-32-9	1 mg/kg	124	46	138
		EP075-EM: Pyrene	129-00-0	1 mg/kg	138	27	169
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2079731)							
EM1819563-003	CPT_MW14_031218_1.0	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	71.1	43	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2084963)							
EM1819561-023	Anonymous	EP071-EM: C10 - C14 Fraction	----	806 mg/kg	89.6	53	123
		EP071-EM: C15 - C28 Fraction	----	3006 mg/kg	98.0	70	124
		EP071-EM: C29 - C36 Fraction	----	1584 mg/kg	89.3	64	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2079731)							
EM1819563-003	CPT_MW14_031218_1.0	EP074-UT: C6 - C10 Fraction	C6_C10	33 mg/kg	68.2	42	106
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2084963)							
EM1819561-023	Anonymous	EP071-EM: >C10 - C16 Fraction	----	1160 mg/kg	94.9	65	123
		EP071-EM: >C16 - C34 Fraction	----	3978 mg/kg	96.0	67	121
		EP071-EM: >C34 - C40 Fraction	----	313 mg/kg	76.4	44	126

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2090705)							
EM1819563-017	QC300_031218	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	93.0	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	91.4	81	133
		EG020A-F: Copper	7440-50-8	0.2 mg/L	90.0	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	90.8	75	133



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2090705) - continued							
EM1819563-017	QC300_031218	EG020A-F: Nickel	7440-02-0	0.2 mg/L	91.7	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	96.5	75	131
EG035F: Dissolved Mercury by FIMS (QCLot: 2090707)							
EM1819810-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	76.8	70	120
EG050F: Dissolved Hexavalent Chromium (QCLot: 2079783)							
EM1819417-011	Anonymous	EG050F: Hexavalent Chromium	18540-29-9	0.5 mg/L	93.8	59	127
EK040P: Fluoride by PC Titrator (QCLot: 2090360)							
EM1819667-004	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	# 66.6	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2081643)							
EM1819548-019	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	20 µg/L	87.4	40	124
		EP074: Trichloroethene	79-01-6	20 µg/L	77.9	54	126
EP074F: Halogenated Aromatic Compounds (QCLot: 2081643)							
EM1819548-019	Anonymous	EP074: Chlorobenzene	108-90-7	20 µg/L	89.7	68	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2081642)							
EM1819548-019	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	78.9	43	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2081642)							
EM1819548-019	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	78.1	44	122
EP080: BTEXN (QCLot: 2081642)							
EM1819548-019	Anonymous	EP080: Benzene	71-43-2	20 µg/L	98.2	68	130
		EP080: Toluene	108-88-3	20 µg/L	91.2	72	132

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1819563**

Page : 1 of 13

Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Project : 60582811
Site : GIJPP Groundwater Study
Sampler : SM
Order number : 60582811

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 04-Dec-2018
Issue Date : 17-Dec-2018
No. of samples received : 20
No. of samples analysed : 11

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EK040P: Fluoride by PC Titrator	EM1819667--004	Anonymous	Fluoride	16984-48-8	66.6 %	70-130%	Recovery less than lower data quality objective

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural QC300_031218	----	----	----	13-Dec-2018	03-Dec-2018	10

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA001: pH in soil using 0.01M CaCl extract								
Soil Glass Jar - Unpreserved (EA001) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	07-Dec-2018	10-Dec-2018	✓	07-Dec-2018	07-Dec-2018	✓
EA029-A: pH Measurements								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW10_031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	11-Dec-2018	28-Aug-2021	✓	11-Dec-2018	11-Mar-2019	✓
EA029-B: Acidity Trail								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW10_031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	11-Dec-2018	28-Aug-2021	✓	11-Dec-2018	11-Mar-2019	✓
EA029-C: Sulfur Trail								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW10_031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	11-Dec-2018	28-Aug-2021	✓	11-Dec-2018	11-Mar-2019	✓
EA029-D: Calcium Values								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW10_031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	11-Dec-2018	28-Aug-2021	✓	11-Dec-2018	11-Mar-2019	✓
EA029-E: Magnesium Values								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW10_031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	11-Dec-2018	28-Aug-2021	✓	11-Dec-2018	11-Mar-2019	✓
EA029-F: Excess Acid Neutralising Capacity								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW10_031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	11-Dec-2018	28-Aug-2021	✓	11-Dec-2018	11-Mar-2019	✓
EA029-G: Retained Acidity								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW10_031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	11-Dec-2018	28-Aug-2021	✓	11-Dec-2018	11-Mar-2019	✓
EA029-H: Acid Base Accounting								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW10_031218_0.5,	CPT_MW10_031218_3.0	03-Dec-2018	11-Dec-2018	28-Aug-2021	✓	11-Dec-2018	11-Mar-2019	✓
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	----	----	----	07-Dec-2018	17-Dec-2018	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	11-Dec-2018	01-Jun-2019	✓	11-Dec-2018	01-Jun-2019	✓



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	11-Dec-2018	31-Dec-2018	✓	12-Dec-2018	31-Dec-2018	✓
EG048: Hexavalent Chromium (Alkaline Digest)								
Soil Glass Jar - Unpreserved (EG048G) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	12-Dec-2018	31-Dec-2018	✓	12-Dec-2018	19-Dec-2018	✓
EK026SF: Total CN by Segmented Flow Analyser								
Soil Glass Jar - Unpreserved (EK026SF) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	12-Dec-2018	17-Dec-2018	✓	13-Dec-2018	26-Dec-2018	✓
EK040T: Fluoride Total								
Soil Glass Jar - Unpreserved (EK040T) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	07-Dec-2018	31-Dec-2018	✓	11-Dec-2018	31-Dec-2018	✓
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066-EM) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	11-Dec-2018	17-Dec-2018	✓	12-Dec-2018	20-Jan-2019	✓
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	06-Dec-2018	10-Dec-2018	✓	07-Dec-2018	10-Dec-2018	✓
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	06-Dec-2018	10-Dec-2018	✓	07-Dec-2018	10-Dec-2018	✓
EP074I: Volatile Halogenated Compounds								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	06-Dec-2018	10-Dec-2018	✓	07-Dec-2018	10-Dec-2018	✓



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075A: Phenolic Compounds (Halogenated)								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	11-Dec-2018	17-Dec-2018	✓	12-Dec-2018	20-Jan-2019	✓
EP075A: Phenolic Compounds (Non-halogenated)								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	11-Dec-2018	17-Dec-2018	✓	12-Dec-2018	20-Jan-2019	✓
EP075B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	11-Dec-2018	17-Dec-2018	✓	12-Dec-2018	20-Jan-2019	✓
EP075I: Organochlorine Pesticides								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	11-Dec-2018	17-Dec-2018	✓	12-Dec-2018	20-Jan-2019	✓
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	06-Dec-2018	10-Dec-2018	✓	07-Dec-2018	10-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP071-EM) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	11-Dec-2018	17-Dec-2018	✓	12-Dec-2018	20-Jan-2019	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	06-Dec-2018	10-Dec-2018	✓	07-Dec-2018	10-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP071-EM) CPT_MW14_031218_0.2, CPT_MW10_031218_0.2, QC100_031218	CPT_MW14_031218_1.0, CPT_MW10_031218_2.5,	03-Dec-2018	11-Dec-2018	17-Dec-2018	✓	12-Dec-2018	20-Jan-2019	✓

Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) QC300_031218	03-Dec-2018	----	----	----	13-Dec-2018	03-Dec-2018	✖
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F) QC300_031218	03-Dec-2018	----	----	----	13-Dec-2018	01-Jun-2019	✔
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) QC300_031218	03-Dec-2018	----	----	----	14-Dec-2018	31-Dec-2018	✔
EG050F: Dissolved Hexavalent Chromium							
Clear Plastic Bottle - NaOH Filtered (EG050F) QC300_031218	03-Dec-2018	----	----	----	06-Dec-2018	31-Dec-2018	✔
EK040P: Fluoride by PC Titrator							
Clear Plastic Bottle - Natural (EK040P) QC300_031218	03-Dec-2018	----	----	----	13-Dec-2018	31-Dec-2018	✔
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066) QC300_031218	03-Dec-2018	10-Dec-2018	10-Dec-2018	✔	11-Dec-2018	19-Jan-2019	✔
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) QC300_031218	03-Dec-2018	10-Dec-2018	10-Dec-2018	✔	11-Dec-2018	19-Jan-2019	✔
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) QC300_031218	03-Dec-2018	07-Dec-2018	17-Dec-2018	✔	07-Dec-2018	17-Dec-2018	✔
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) QC300_031218	03-Dec-2018	07-Dec-2018	17-Dec-2018	✔	07-Dec-2018	17-Dec-2018	✔
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) QC300_031218	03-Dec-2018	07-Dec-2018	17-Dec-2018	✔	07-Dec-2018	17-Dec-2018	✔
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) QC300_031218	03-Dec-2018	07-Dec-2018	17-Dec-2018	✔	07-Dec-2018	17-Dec-2018	✔
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM)) QC300_031218	03-Dec-2018	10-Dec-2018	10-Dec-2018	✔	11-Dec-2018	19-Jan-2019	✔
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) QC300_031218	03-Dec-2018	10-Dec-2018	10-Dec-2018	✔	11-Dec-2018	19-Jan-2019	✔



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) QC300_031218	03-Dec-2018	10-Dec-2018	10-Dec-2018	✓	11-Dec-2018	19-Jan-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC300_031218, QC400_031218, QC500_031218, QC501_031218	03-Dec-2018	07-Dec-2018	17-Dec-2018	✓	07-Dec-2018	17-Dec-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) QC300_031218	03-Dec-2018	10-Dec-2018	10-Dec-2018	✓	11-Dec-2018	19-Jan-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC300_031218, QC400_031218, QC500_031218, QC501_031218	03-Dec-2018	07-Dec-2018	17-Dec-2018	✓	07-Dec-2018	17-Dec-2018	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) QC300_031218, QC400_031218, QC500_031218, QC501_031218	03-Dec-2018	07-Dec-2018	17-Dec-2018	✓	07-Dec-2018	17-Dec-2018	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	15	6.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	15	6.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	18	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	2	1	200.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	5	20.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	2	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	1	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	1	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	13	15.38	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	13	15.38	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	2	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	1	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	1	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001	SOIL	In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3)
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	SOIL	In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	SOIL	In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3)
Total Fluoride	EK040T	SOIL	(In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
PCB - VIC EPA 448.3 Screen	EP066-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
TRH - Semivolatile Fraction	EP071-EM	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.



Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds - Ultra-trace	EP074-UT	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)
Volatile Organic Compounds - Ultra-trace - Summations	EP074-UT-SUM	SOIL	Summation of MAHs and VHCs
Semivolatile Organic Compounds - Waste Classification	EP075-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502)
SVOC - Waste Classification (Sums)	EP075-EM-SUM	SOIL	Summations for EP075 (EM variation)
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Metals by ICP-MS - Suite B	EG020B-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium - Dissolved	EG050F	WATER	In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazine. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)



Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Preparation Methods	Method	Matrix	Method Descriptions
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH.
pH in soil using a 0.01M CaCl2 extract	EA001-PR	SOIL	In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
Total Fluoride	EK040T-PR	SOIL	In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux.
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Methanolic Extraction of Soils - Ultra-trace.	ORG16-UT	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids - VIC EPA Screen	ORG17-EM	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

Analysis received 06/12/18 12:34 pm - BN

AECOM

Q4AN(EV)-007-FM1

ANZ
FQM - Generic Chain of Custody Form

CONSULTANT: Aecon		ADDRESS / OFFICE:		SAMPLER: S. Macdonald		Destination Laboratory	
PROJECT MANAGER (PM):		SITE: GLUPP Groundwater Study		MOBILE:		PHONE:	
PROJECT NUMBER & TASK CO 60582811		P.O. NO.: 4		EMAIL REPORT TO:		AIS.	
RESULTS REQUIRED (Date):		QUOTE NO.: EN/096/18		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY				COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:			
COOLER SEAL (circle appropriate)							
Intact: Yes No							
SAMPLE TEMPERATURE							
CHILLED: Yes No							
SAMPLE INFORMATION (note: S = Soil, W=Water)				CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
1	CPT-MW02-051218-0.2	S	05.12.18	1000		1510	
2	CPT-MW02-051218-0.5			1005			
3	CPT-MW02-051218-1.0			1010			
4	CPT-MW02-051218-2.0			1015			
5	CPT-MW02-051218-3.0			1020			
6	CPT-MW02-051218-4.0			1025			
7	CPT-MW03-051218-0.2			1310			
8	CPT-MW03-051218-0.5			1315			
9	CPT-MW03-051218-1.0			1320			
10	CPT-MW03-051218-2.0			1325			
11	CPT-MW03-051218-3.0			1330			
12	CPT-MW03-051218-4.0			1335			
13	CPT-MW04-051218-0.2			1430			
14	CPT-MW04-051218-0.5			1435			
15	CPT-MW04-051218-1.0			1440			
16	CPT-MW04-051218-2.0			1445			
17	CPT-MW04-051218-3.0			1450			
18	CPT-MW04-051218-4.0			1455			
19	CPT-ORC302-051218	W		-		8	
RELINQUISHED BY:				RECEIVED BY:			
Name: Sebastian Macdonald		Date: 05.12.18		Name: Macdonald		Date: 05.12.18	
Of: Aecon		Time: 16:30		Of: pm		Time: 17:30	
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.				Soil Container Codes: Jar = Unpreserved glass jar			

Environmental Division
Melbourne
Work Order Reference
EM1819646



Telephone : 61-3-8549 9600

Please freeze Ziplock bags for Acid sulfate.

ANZ
EFQM - Generic Chain of Custody Form

[illegible]

Please freeze Ziplock bags for acid sulfate.

From: [REDACTED]@aecom.com>
Sent: Thursday, 6 December 2018 12:34 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: EM1819646 - AECOM - 60582811

Hi [REDACTED]

Please analyse:

1. CPT_MW02_051218_0.2 = IWRG621
2. CPT_MW02_051218_0.5 = IWRG621
3. CPT_MW02_051218_1.0 = Chromium Reduced Sulphur - 3
4. CPT_MW02_051218_2.0 = Chromium Reduced Sulphur - 4
5. CPT_MW03_051218_0.2 = IWRG621 - 7
6. CPT_MW03_051218_0.5 = IWRG621 - 8
7. CPT_MW03_051218_1.0 = Chromium Reduced Sulphur - 9
8. CPT_MW03_051218_3.0 = Chromium Reduced Sulphur - 11
9. CPT_MW04_051218_0.2 = IWRG621 - 13
10. CPT_MW04_051218_0.5 = IWRG621 - 14
11. CPT_MW04_051218_0.5 = Chromium Reduced Sulphur - 14
12. CPT_MW04_051218_2.0 = Chromium Reduced Sulphur - 16
13. QC302_051218 = IWRG621 water equivalent - 19
14. QC402_051218 = TPH(C6-C9)/BTEXN - 20
15. QC504_051218 = TPH(C6-C9)/BTEXN - 21
16. QC505_051218 = TPH(C6-C9)/BTEXN - 22

At standard TAT. Thanks.

[REDACTED]
Senior Environmental Engineer
[REDACTED]
[REDACTED]

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

[LinkedIn](#) [Twitter](#) [Facebook](#) [Instagram](#)

From: [REDACTED]@alsglobal.com]
Sent: Thursday, 6 December 2018 10:28 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: EM1819646 - AECOM - 60582811

Hi [REDACTED]

FYI, please see attached samples received yesterday without analysis

Thanks

Regards

CERTIFICATE OF ANALYSIS

Work Order : **EM1819646**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60582811
Order number : 60582811
C-O-C number : ----
Sampler : SM
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 22
No. of samples analysed : 15

Page : 1 of 20
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 05-Dec-2018 17:25
Date Analysis Commenced : 07-Dec-2018
Issue Date : 14-Dec-2018 18:23



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
[REDACTED]	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
[REDACTED]	Senior Organic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG035T: EM1819668 #38 Poor matrix spike recovery for dissolved mercury due to sample matrix. Confirmed by re-extraction and re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



□ □ □ □ □ □ □ □ □ □ □ □

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW02_051218_ 0.2	CPT_MW02_051218_ 0.5	CPT_MW02_051218_ 1.0	CPT_MW02_051218_ 2.0	CPT_MW03_051218_ 0.2
Client sampling date / time					05-Dec-2018 10:00	05-Dec-2018 10:05	05-Dec-2018 10:10	05-Dec-2018 10:15	05-Dec-2018 13:10
Compound	CAS Number	LOR	Unit		EM1819646-001	EM1819646-002	EM1819646-003	EM1819646-004	EM1819646-007
				Result	Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl ₂)	----	0.1	pH Unit		4.8	4.7	----	----	7.2
EA026 : Chromium Reducible Sulfur									
Chromium Reducible Sulphur	----	0.005	%		----	----	0.012	0.006	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		20.1	12.6	----	----	16.4
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	----	----	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	----	----	<1
Copper	7440-50-8	5	mg/kg		<5	<5	----	----	<5
Lead	7439-92-1	5	mg/kg		14	<5	----	----	7
Molybdenum	7439-98-7	2	mg/kg		<2	<2	----	----	<2
Nickel	7440-02-0	2	mg/kg		2	2	----	----	4
Selenium	7782-49-2	5	mg/kg		<5	<5	----	----	<5
Silver	7440-22-4	2	mg/kg		<2	<2	----	----	<2
Tin	7440-31-5	5	mg/kg		8	<5	----	----	<5
Zinc	7440-66-6	5	mg/kg		18	<5	----	----	<5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	----	----	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg		<1	<1	----	----	<1
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg		<40	140	----	----	220
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	----	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Styrene	100-42-5	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	----	<0.5



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW02_051218_ 0.2	CPT_MW02_051218_ 0.5	CPT_MW02_051218_ 1.0	CPT_MW02_051218_ 2.0	CPT_MW03_051218_ 0.2
Client sampling date / time					05-Dec-2018 10:00	05-Dec-2018 10:05	05-Dec-2018 10:10	05-Dec-2018 10:15	05-Dec-2018 13:10
Compound	CAS Number	LOR	Unit		EM1819646-001	EM1819646-002	EM1819646-003	EM1819646-004	EM1819646-007
					Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	<1
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.1-Dichloroethene	75-35-4	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
Methylene chloride	75-09-2	0.4	mg/kg		<0.4	<0.4	----	----	<0.4
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
Chloroform	67-66-3	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
1.2-Dichloroethane	107-06-2	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
Trichloroethene	79-01-6	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg		<0.04	<0.04	----	----	<0.04
Tetrachloroethene	127-18-4	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
2.6-Dichlorophenol	87-65-0	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		<0.05	<0.05	----	----	<0.05



□ □ □ □ □ □ □ □ □ □

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT_MW02_051218_ 0.2	CPT_MW02_051218_ 0.5	CPT_MW02_051218_ 1.0	CPT_MW02_051218_ 2.0	CPT_MW03_051218_ 0.2
Client sampling date / time				05-Dec-2018 10:00	05-Dec-2018 10:05	05-Dec-2018 10:10	05-Dec-2018 10:15	05-Dec-2018 13:10
Compound	CAS Number	LOR	Unit	EM1819646-001	EM1819646-002	EM1819646-003	EM1819646-004	EM1819646-007
				Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Halogenated) - Continued								
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	----	----	<0.03
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	----	----	<0.2
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	<0.03	<0.03	----	----	<0.03
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	<1	<1	----	----	<1
2-Methylphenol	95-48-7	1	mg/kg	<1	<1	----	----	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	----	----	<1
2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	----	----	<1
2,4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	----	----	<1
2,4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	----	----	<5
4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	----	----	<5
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	----	----	<5
Dinoseb	88-85-7	5	mg/kg	<5	<5	----	----	<5
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	----	----	<5
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	<1	<1	----	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	<0.5



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW02_051218_ 0.2	CPT_MW02_051218_ 0.5	CPT_MW02_051218_ 1.0	CPT_MW02_051218_ 2.0	CPT_MW03_051218_ 0.2
Client sampling date / time					05-Dec-2018 10:00	05-Dec-2018 10:05	05-Dec-2018 10:10	05-Dec-2018 10:15	05-Dec-2018 13:10
Compound	CAS Number	LOR	Unit		EM1819646-001	EM1819646-002	EM1819646-003	EM1819646-004	EM1819646-007
					Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	----	----	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	----	----	1.2
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
gamma-BHC	58-89-9	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Aldrin	309-00-2	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Endrin	72-20-8	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
4,4'-DDT	50-29-3	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Methoxychlor	72-43-5	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
^ Sum of organochlorine pesticides	----	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
^ Chlordane	57-74-9	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	----	<50



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW02_051218_ 0.2	CPT_MW02_051218_ 0.5	CPT_MW02_051218_ 1.0	CPT_MW02_051218_ 2.0	CPT_MW03_051218_ 0.2
Client sampling date / time					05-Dec-2018 10:00	05-Dec-2018 10:05	05-Dec-2018 10:10	05-Dec-2018 10:15	05-Dec-2018 13:10
Compound	CAS Number	LOR	Unit		EM1819646-001	EM1819646-002	EM1819646-003	EM1819646-004	EM1819646-007
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	----	<10
C15 - C28 Fraction	----	100	mg/kg		140	<100	----	----	<100
C29 - C36 Fraction	----	100	mg/kg		170	<100	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		310	<50	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg		240	<100	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		240	<50	----	----	<50
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	----	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	----	<10
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		92.7	91.0	----	----	90.3
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		68.4	76.6	----	----	81.5
Toluene-D8	2037-26-5	0.1	%		66.8	75.9	----	----	77.6
4-Bromofluorobenzene	460-00-4	0.1	%		76.7	83.7	----	----	87.2
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		110	110	----	----	100
2-Chlorophenol-D4	93951-73-6	0.025	%		82.3	85.4	----	----	77.8
2,4,6-Tribromophenol	118-79-6	0.025	%		81.9	59.9	----	----	66.1
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		104	110	----	----	98.3
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%		91.9	95.4	----	----	84.4
2-Fluorobiphenyl	321-60-8	0.025	%		99.0	99.9	----	----	91.3
Anthracene-d10	1719-06-8	0.025	%		102	105	----	----	100
4-Terphenyl-d14	1718-51-0	0.025	%		65.0	75.5	----	----	66.4



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW03_051218_ 0.5	CPT_MW03_051218_ 1.0	CPT_MW03_051218_ 3.0	CPT_MW04_051218_ 0.2	CPT_MW04_051218_ 0.5
Client sampling date / time					05-Dec-2018 13:15	05-Dec-2018 13:20	05-Dec-2018 13:30	05-Dec-2018 14:30	05-Dec-2018 14:35
Compound	CAS Number	LOR	Unit		EM1819646-008	EM1819646-009	EM1819646-011	EM1819646-013	EM1819646-014
				Result	Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl ₂)	----	0.1	pH Unit		5.6	----	----	4.2	5.5
EA026 : Chromium Reducible Sulfur									
Chromium Reducible Sulphur	----	0.005	%		----	0.006	<0.005	----	0.006
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		20.9	----	----	6.8	19.4
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	----	----	<5	5
Cadmium	7440-43-9	1	mg/kg		<1	----	----	<1	<1
Copper	7440-50-8	5	mg/kg		<5	----	----	<5	<5
Lead	7439-92-1	5	mg/kg		9	----	----	7	9
Molybdenum	7439-98-7	2	mg/kg		<2	----	----	<2	<2
Nickel	7440-02-0	2	mg/kg		7	----	----	<2	12
Selenium	7782-49-2	5	mg/kg		<5	----	----	<5	<5
Silver	7440-22-4	2	mg/kg		<2	----	----	<2	<2
Tin	7440-31-5	5	mg/kg		<5	----	----	<5	<5
Zinc	7440-66-6	5	mg/kg		<5	----	----	<5	<5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg		<1	----	----	<1	<1
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg		220	----	----	40	180
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	----	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Styrene	100-42-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	<0.5	<0.5



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW03_051218_0.5	CPT_MW03_051218_1.0	CPT_MW03_051218_3.0	CPT_MW04_051218_0.2	CPT_MW04_051218_0.5
Client sampling date / time					05-Dec-2018 13:15	05-Dec-2018 13:20	05-Dec-2018 13:30	05-Dec-2018 14:30	05-Dec-2018 14:35
Compound	CAS Number	LOR	Unit		EM1819646-008	EM1819646-009	EM1819646-011	EM1819646-013	EM1819646-014
				Result	Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	----	----	----	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	<0.5	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	<1	<1
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	----	----	----	<0.02	<0.02
1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	----	----	----	<0.01	<0.01
Methylene chloride	75-09-2	0.4	mg/kg	<0.4	----	----	----	<0.4	<0.4
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	----	----	----	<0.02	<0.02
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	----	----	----	<0.01	<0.01
Chloroform	67-66-3	0.02	mg/kg	<0.02	----	----	----	<0.02	<0.02
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	----	----	----	<0.01	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	----	----	----	<0.01	<0.01
1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	----	----	----	<0.02	<0.02
Trichloroethene	79-01-6	0.02	mg/kg	<0.02	----	----	----	<0.02	<0.02
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	----	----	----	<0.04	<0.04
Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	----	----	----	<0.02	<0.02
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	----	----	----	<0.01	<0.01
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	----	----	----	<0.02	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	----	----	----	<0.02	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	----	----	----	<0.02	<0.02
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	----	----	----	<0.02	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	----	----	----	<0.02	<0.02
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	----	----	----	<0.01	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	----	----	----	<0.01	<0.01
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	----	----	----	<0.01	<0.01
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	----	----	----	<0.05	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	----	----	----	<0.05	<0.05



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW03_051218_ 0.5	CPT_MW03_051218_ 1.0	CPT_MW03_051218_ 3.0	CPT_MW04_051218_ 0.2	CPT_MW04_051218_ 0.5
Client sampling date / time					05-Dec-2018 13:15	05-Dec-2018 13:20	05-Dec-2018 13:30	05-Dec-2018 14:30	05-Dec-2018 14:35
Compound	CAS Number	LOR	Unit		EM1819646-008	EM1819646-009	EM1819646-011	EM1819646-013	EM1819646-014
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Halogenated) - Continued									
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg		<0.03	----	----	<0.03	<0.03
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg		<0.05	----	----	<0.05	<0.05
Pentachlorophenol	87-86-5	0.2	mg/kg		<0.2	----	----	<0.2	<0.2
^ Sum of Phenols (halogenated)	----	0.03	mg/kg		<0.03	----	----	<0.03	<0.03
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		<1	----	----	<1	<1
2-Methylphenol	95-48-7	1	mg/kg		<1	----	----	<1	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	----	<1	<1
2-Nitrophenol	88-75-5	1	mg/kg		<1	----	----	<1	<1
2,4-Dimethylphenol	105-67-9	1	mg/kg		<1	----	----	<1	<1
2,4-Dinitrophenol	51-28-5	5	mg/kg		<5	----	----	<5	<5
4-Nitrophenol	100-02-7	5	mg/kg		<5	----	----	<5	<5
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg		<5	----	----	<5	<5
Dinoseb	88-85-7	5	mg/kg		<5	----	----	<5	<5
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg		<5	----	----	<5	<5
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		<1	----	----	<1	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	<0.5	<0.5



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW03_051218_ 0.5	CPT_MW03_051218_ 1.0	CPT_MW03_051218_ 3.0	CPT_MW04_051218_ 0.2	CPT_MW04_051218_ 0.5
Client sampling date / time					05-Dec-2018 13:15	05-Dec-2018 13:20	05-Dec-2018 13:30	05-Dec-2018 14:30	05-Dec-2018 14:35
Compound	CAS Number	LOR	Unit		EM1819646-008	EM1819646-009	EM1819646-011	EM1819646-013	EM1819646-014
				Result	Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	----	----	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	----	----	1.2	1.2
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
beta-BHC	319-85-7	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
gamma-BHC	58-89-9	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
delta-BHC	319-86-8	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
Heptachlor	76-44-8	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
Aldrin	309-00-2	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	<0.05	<0.05
Dieldrin	60-57-1	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
Endrin	72-20-8	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
4,4'-DDT	50-29-3	0.05	mg/kg	<0.05	----	----	----	<0.05	<0.05
Methoxychlor	72-43-5	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
^ Sum of organochlorine pesticides	----	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	----	<0.05	<0.05
^ Chlordane	57-74-9	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	<0.03	----	----	----	<0.03	<0.03
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	<50	<50



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW03_051218_ 0.5	CPT_MW03_051218_ 1.0	CPT_MW03_051218_ 3.0	CPT_MW04_051218_ 0.2	CPT_MW04_051218_ 0.5
Client sampling date / time					05-Dec-2018 13:15	05-Dec-2018 13:20	05-Dec-2018 13:30	05-Dec-2018 14:30	05-Dec-2018 14:35
Compound	CAS Number	LOR	Unit		EM1819646-008	EM1819646-009	EM1819646-011	EM1819646-013	EM1819646-014
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	<10	<10
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	<50	<50
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	<50	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	<10	<10
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		90.3	----	----	88.3	86.5
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		69.7	----	----	84.2	81.1
Toluene-D8	2037-26-5	0.1	%		65.8	----	----	81.5	81.2
4-Bromofluorobenzene	460-00-4	0.1	%		76.5	----	----	87.9	87.2
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		106	----	----	103	104
2-Chlorophenol-D4	93951-73-6	0.025	%		80.9	----	----	78.8	80.1
2,4,6-Tribromophenol	118-79-6	0.025	%		62.3	----	----	69.0	69.3
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		105	----	----	99.4	100
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%		91.3	----	----	88.1	87.6
2-Fluorobiphenyl	321-60-8	0.025	%		96.2	----	----	90.7	92.3
Anthracene-d10	1719-06-8	0.025	%		99.1	----	----	95.6	95.9
4-Terphenyl-d14	1718-51-0	0.025	%		83.6	----	----	80.6	86.3



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW04_051218_2.0	----	----	----	----
				Client sampling date / time	05-Dec-2018 14:45	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1819646-016	-----	-----	-----	-----
					Result	----	----	----	----
EA026 : Chromium Reducible Sulfur									
Chromium Reducible Sulphur	----	0.005	%		<0.005	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC302_051218	CPT_QC402_051218	CPT_QC504_051218	CPT_QC505_051218	----
Client sampling date / time					05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1819646-019	EM1819646-020	EM1819646-021	EM1819646-022	-----
				Result	Result	Result	Result	Result	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		6.94	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Silver	7440-22-4	0.001	mg/L		<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG050F: Dissolved Hexavalent Chromium									
Hexavalent Chromium	18540-29-9	0.01	mg/L		<0.01	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	0.004	mg/L		<0.004	----	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
^ Total Polychlorinated biphenyls	----	1	µg/L		<1	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	5	µg/L		<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Vinyl chloride	75-01-4	50	µg/L		<50	----	----	----	----
1,1-Dichloroethene	75-35-4	5	µg/L		<5	----	----	----	----
Methylene chloride	75-09-2	5	µg/L		<5	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	5	µg/L		<5	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	5	µg/L		<5	----	----	----	----
1,1,1-Trichloroethane	71-55-6	5	µg/L		<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	----	----	----	----
1,2-Dichloroethane	107-06-2	5	µg/L		<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC302_051218	CPT_QC402_051218	CPT_QC504_051218	CPT_QC505_051218	----
Client sampling date / time					05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1819646-019	EM1819646-020	EM1819646-021	EM1819646-022	-----
					Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	----	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	----	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	----	----	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	2	µg/L		<2	----	----	----	----
2,4-Dichlorophenol	120-83-2	2	µg/L		<2	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC302_051218	CPT_QC402_051218	CPT_QC504_051218	CPT_QC505_051218	----
Client sampling date / time					05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1819646-019	EM1819646-020	EM1819646-021	EM1819646-022	-----
					Result	Result	Result	Result	----
EP075A: Phenolic Compounds (Halogenated) - Continued									
2,6-Dichlorophenol	87-65-0	2	µg/L		<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	4	µg/L		<4	----	----	----	----
2,4,5-Trichlorophenol	95-95-4	2	µg/L		<2	----	----	----	----
2,4,6-Trichlorophenol	88-06-2	2	µg/L		<2	----	----	----	----
2,3,5,6-Tetrachlorophenol	935-95-5	2	µg/L		<2	----	----	----	----
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	2	µg/L		<2	----	----	----	----
Pentachlorophenol	87-86-5	2	µg/L		<2	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	4	µg/L		<4	----	----	----	----
2-Methylphenol	95-48-7	4	µg/L		<4	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L		<4	----	----	----	----
2-Nitrophenol	88-75-5	4	µg/L		<4	----	----	----	----
2,4-Dimethylphenol	105-67-9	4	µg/L		<4	----	----	----	----
2,4-Dinitrophenol	51-28-5	100	µg/L		<100	----	----	----	----
4-Nitrophenol	100-02-7	50	µg/L		<50	----	----	----	----
2-Methyl-4,6-dinitrophenol	8071-51-0	50	µg/L		<50	----	----	----	----
Dinoseb	88-85-7	50	µg/L		<50	----	----	----	----
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	50	µg/L		<50	----	----	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDT	50-29-3	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC302_051218	CPT_QC402_051218	CPT_QC504_051218	CPT_QC505_051218	----
Client sampling date / time					05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1819646-019	EM1819646-020	EM1819646-021	EM1819646-022	-----
					Result	Result	Result	Result	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		105	----	----	----	----
EP074S: VOC Surrogates									
1,2-Dichloroethane-D4	17060-07-0	5	%		116	----	----	----	----
Toluene-D8	2037-26-5	5	%		101	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		106	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		26.1	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		69.9	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%		98.9	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		91.2	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		94.0	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		88.8	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC302_051218	CPT_QC402_051218	CPT_QC504_051218	CPT_QC505_051218	----
Client sampling date / time					05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1819646-019	EM1819646-020	EM1819646-021	EM1819646-022	-----
					Result	Result	Result	Result	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.25	%		36.9	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.25	%		85.8	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.25	%		83.0	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.25	%		102	----	----	----	----
1,2-Dichlorobenzene-D4	2199-69-1	0.25	%		96.5	----	----	----	----
2-Fluorobiphenyl	321-60-8	0.25	%		105	----	----	----	----
Anthracene-d10	1719-06-8	0.25	%		108	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.25	%		98.5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		114	103	108	99.6	----
Toluene-D8	2037-26-5	2	%		102	87.6	85.5	82.3	----
4-Bromofluorobenzene	460-00-4	2	%		119	108	106	103	----



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Sub-Matrix: SOIL		□□□□ □ □□□ □ s □	
<i>Compound</i>	<i>CAS Number</i>	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1,2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	28	134
2-Chlorophenol-D4	93951-73-6	27	123
2,4,6-Tribromophenol	118-79-6	25	149
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	29	125
1,2-Dichlorobenzene-D4	2199-69-1	31	117
2-Fluorobiphenyl	321-60-8	44	136
Anthracene-d10	1719-06-8	53	133
4-Terphenyl-d14	1718-51-0	59	141

Sub-Matrix: WATER		□□□□ □ □□□ □ s □	
<i>Compound</i>	<i>CAS Number</i>	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	125
EP074S: VOC Surrogates			
1,2-Dichloroethane-D4	17060-07-0	72	132
Toluene-D8	2037-26-5	77	132
4-Bromofluorobenzene	460-00-4	67	131
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	13	90
2-Chlorophenol-D4	93951-73-6	42	117
2,4,6-Tribromophenol	118-79-6	52	140
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	49	136

Sub-Matrix: WATER		☐☐☐☐ ☐ ☐☐☐ ☐☐ s ☐	
Compound	CAS Number	☐☐%	☐☐☐
EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued			
1,2-Dichlorobenzene-D4	2199-69-1	49	128
2-Fluorobiphenyl	321-60-8	57	137
Anthracene-d10	1719-06-8	67	137
4-Terphenyl-d14	1718-51-0	66	136
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

Work Order	: EM1819646	Page	: 1 of 14
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]		
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [REDACTED]	E-mail	: [REDACTED]@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60582811	Date Received	: 05-Dec-2018 17:25
Order number	: 60582811	Date Analysed	: 07-Dec-2018
C-O-C number	: ----	Date Issued	: 14-Dec-2018 18:23
No. of samples received	: 22		
No. of samples analysed	: 15	Quote number	: EN/096/18

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Client sample ID		CPT_MW02_0 51218_0.2	CPT_MW02_0 51218_0.5	CPT_MW03_0 51218_0.2	CPT_MW03_0 51218_0.5	CPT_MW04_0 51218_0.2		
				Sampling date/time							0000 00	0000 00
											00 00	0000
				00 00	00 00	EM1819646-001	EM1819646-002	EM1819646-007	EM1819646-008	EM1819646-013		
Compound	Method	LOR	Unit	00 00	0000							
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	2	12.5	4.8	4.7	7.2	5.6	4.2		
EG005T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	2000	<5	<5	<5	<5	<5		
Cadmium	EG005T	1	mg/kg	----	400	<1	<1	<1	<1	<1		
Copper	EG005T	5	mg/kg	----	20000	<5	<5	<5	<5	<5		
Lead	EG005T	5	mg/kg	----	6000	14	<5	7	9	7		
Molybdenum	EG005T	2	mg/kg	----	4000	<2	<2	<2	<2	<2		
Nickel	EG005T	2	mg/kg	----	12000	2	2	4	7	<2		
Selenium	EG005T	5	mg/kg	----	200	<5	<5	<5	<5	<5		
Silver	EG005T	2	mg/kg	----	720	<2	<2	<2	<2	<2		
Zinc	EG005T	5	mg/kg	----	140000	18	<5	<5	<5	<5		
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	300	<0.1	<0.1	<0.1	<0.1	<0.1		
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<0.5	<0.5	<0.5	<0.5	<0.5		
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	10000	<1	<1	<1	<1	<1		
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	40000	<40	140	220	220	40		
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	16	<0.2	<0.2	<0.2	<0.2	<0.2		
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	240	<0.2	<0.2	<0.2	<0.2	<0.2		
EP074I: Volatile Halogenated Compounds												
Vinyl chloride	EP074-UT	0.02	mg/kg	----	4.8	<0.02	<0.02	<0.02	<0.02	<0.02		
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	11	<0.02	<0.02	<0.02	<0.02	<0.02		
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	50	<0.01	<0.01	<0.01	<0.01	<0.01		
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	320	<0.03	<0.03	<0.03	<0.03	<0.03		
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	2200	<1	<1	<1	<1	<1		
EP075B: Polynuclear Aromatic Hydrocarbons												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Client sample ID		CPT_MW02_0 51218_0.2	CPT_MW02_0 51218_0.5	CPT_MW03_0 51218_0.2	CPT_MW03_0 51218_0.5	CPT_MW04_0 51218_0.2		
				Sampling date/time							□□□□ □□	□□□□ □□
				05-Dec-2018 10:00	05-Dec-2018 10:05						05-Dec-2018 13:10	05-Dec-2018 13:15
Compound	Method	LOR	Unit	□□ □□ □□ □	□□□□ □□ □	EM1819646-001	EM1819646-002	EM1819646-007	EM1819646-008	EM1819646-013		
EP075B: Polynuclear Aromatic Hydrocarbons - Continued												
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	20	<0.5	<0.5	<0.5	<0.5	<0.5		
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	400	<0.5	<0.5	<0.5	<0.5	<0.5		
EP075I: Organochlorine Pesticides												
Heptachlor	EP075-EM	0.03	mg/kg	----	4.8	<0.03	<0.03	<0.03	<0.03	<0.03		
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	4.8	<0.03	<0.03	<0.03	<0.03	<0.03		
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	<0.05	<0.05	<0.05	<0.05	<0.05		
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	16	<0.03	<0.03	<0.03	<0.03	<0.03		
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	50	<0.03	<0.03	<0.03	<0.03	<0.03		
EP080/071: Total Petroleum Hydrocarbons												
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	2600	<10	<10	<10	<10	<10		
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	40000	310	<50	<50	<50	<50		

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

Sub-Matrix: SOIL				Client sample ID		CPT_MW02_0 51218_0.2	CPT_MW02_0 51218_0.5	CPT_MW03_0 51218_0.2	CPT_MW03_0 51218_0.5	CPT_MW04_0 51218_0.2
				Sampling date/time						
Compound	Method	LOR	Unit	□□ □□ □□ □	□□□□ □□ □	05-Dec-2018 10:00	05-Dec-2018 10:05	05-Dec-2018 13:10	05-Dec-2018 13:15	05-Dec-2018 14:30
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	4	9	4.8	4.7	7.2	5.6	4.2
EG005T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	500	<5	<5	<5	<5	<5
Cadmium	EG005T	1	mg/kg	----	100	<1	<1	<1	<1	<1
Copper	EG005T	5	mg/kg	----	5000	<5	<5	<5	<5	<5
Lead	EG005T	5	mg/kg	----	1500	14	<5	7	9	7
Molybdenum	EG005T	2	mg/kg	----	1000	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	3000	2	2	4	7	<2
Selenium	EG005T	5	mg/kg	----	50	<5	<5	<5	<5	<5
Silver	EG005T	2	mg/kg	----	180	<2	<2	<2	<2	<2
Tin	EG005T	5	mg/kg	----	500	8	<5	<5	<5	<5
Zinc	EG005T	5	mg/kg	----	35000	18	<5	<5	<5	<5
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	75	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	<1	<1	<1	<1
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	10000	<40	140	220	220	40
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	4	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	70	<0.2	<0.2	<0.2	<0.2	<0.2
EP074I: Volatile Halogenated Compounds										
Vinyl chloride	EP074-UT	0.02	mg/kg	----	1.2	<0.02	<0.02	<0.02	<0.02	<0.02
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	2.8	<0.02	<0.02	<0.02	<0.02	<0.02
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	10	<0.01	<0.01	<0.01	<0.01	<0.01
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	<0.03	<0.03	<0.03	<0.03
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	560	<1	<1	<1	<1	<1
EP075B: Polynuclear Aromatic Hydrocarbons										



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Client sample ID		CPT_MW02_0 51218_0.2	CPT_MW02_0 51218_0.5	CPT_MW03_0 51218_0.2	CPT_MW03_0 51218_0.5	CPT_MW04_0 51218_0.2
Sampling date/time				□□□□ □□	□□□□ □□					
				05-Dec-2018 10:00	05-Dec-2018 10:05					
Compound	Method	LOR	Unit	□□ □□ □□ □	□□□□ □□ □	EM1819646-001	EM1819646-002	EM1819646-007	EM1819646-008	EM1819646-013
EP075B: Polynuclear Aromatic Hydrocarbons - Continued										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	<0.5	<0.5
EP075I: Organochlorine Pesticides										
Heptachlor	EP075-EM	0.03	mg/kg	----	1.2	<0.03	<0.03	<0.03	<0.03	<0.03
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	1.2	<0.03	<0.03	<0.03	<0.03	<0.03
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	4	<0.03	<0.03	<0.03	<0.03	<0.03
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	<0.03	<0.03	<0.03	<0.03
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	650	<10	<10	<10	<10	<10
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	10000	310	<50	<50	<50	<50

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

Sub-Matrix: SOIL				Client sample ID		CPT_MW02_0 51218_0.2	CPT_MW02_0 51218_0.5	CPT_MW03_0 51218_0.2	CPT_MW03_0 51218_0.5	CPT_MW04_0 51218_0.2
				Sampling date/time						
Compound	Method	LOR	Unit	□□ □□ □□ □	□□□□ □□ □	05-Dec-2018 10:00 EM1819646-001	05-Dec-2018 10:05 EM1819646-002	05-Dec-2018 13:10 EM1819646-007	05-Dec-2018 13:15 EM1819646-008	05-Dec-2018 14:30 EM1819646-013
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	4	9	4.8	4.7	7.2	5.6	4.2
EG005T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	20	<5	<5	<5	<5	<5
Cadmium	EG005T	1	mg/kg	----	3	<1	<1	<1	<1	<1
Copper	EG005T	5	mg/kg	----	100	<5	<5	<5	<5	<5
Lead	EG005T	5	mg/kg	----	300	14	<5	7	9	7
Molybdenum	EG005T	2	mg/kg	----	40	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	60	2	2	4	7	<2
Selenium	EG005T	5	mg/kg	----	10	<5	<5	<5	<5	<5
Silver	EG005T	2	mg/kg	----	10	<2	<2	<2	<2	<2
Tin	EG005T	5	mg/kg	----	50	8	<5	<5	<5	<5
Zinc	EG005T	5	mg/kg	----	200	18	<5	<5	<5	<5
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	1	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	50	<1	<1	<1	<1	<1
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	450	<40	140	220	220	40
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066-EM	0.1	mg/kg	----	2	<0.1	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	1	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	7	<0.2	<0.2	<0.2	<0.2	<0.2
EP074I: Volatile Halogenated Compounds										
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	1	<0.01	<0.01	<0.01	<0.01	<0.01
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	<0.03	<0.03	<0.03	<0.03
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	60	<1	<1	<1	<1	<1
EP075B: Polynuclear Aromatic Hydrocarbons										



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

				Client sample ID			CPT_MW02_0 51218_0.2	CPT_MW02_0 51218_0.5	CPT_MW03_0 51218_0.2	CPT_MW03_0 51218_0.5	CPT_MW04_0 51218_0.2
				Sampling date/time	□ □ □ □ □ □	□ □ □ □ □ □	05-Dec-2018 10:00	05-Dec-2018 10:05	05-Dec-2018 13:10	05-Dec-2018 13:15	05-Dec-2018 14:30
Compound	Method	LOR	Unit		□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □ □ □ □ □	EM1819646-001	EM1819646-002	EM1819646-007	EM1819646-008	EM1819646-013
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----		1	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----		20	<0.5	<0.5	<0.5	<0.5	<0.5
EP075I: Organochlorine Pesticides											
Sum of organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----		1	<0.03	<0.03	<0.03	<0.03	<0.03
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----		100	<10	<10	<10	<10	<10
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----		1000	310	<50	<50	<50	<50



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Client sample ID		Sampling date/time		CPT_MW04_0 51218_0.5		----	----	----	----
				Sampling date/time		05-Dec-2018 14:35	EM1819646-014	-----	-----	-----	-----		
				Compound	Method	LOR	Unit	2	12.5	5.5	----	----	----
EA001: pH in soil using 0.01M CaCl extract													
pH (CaCl2)	EA001	0.1	pH Unit	2	12.5	5.5	----	----	----	----	----	----	
EG005T: Total Metals by ICP-AES													
Arsenic	EG005T	5	mg/kg	----	2000	5	----	----	----	----	----	----	
Cadmium	EG005T	1	mg/kg	----	400	<1	----	----	----	----	----	----	
Copper	EG005T	5	mg/kg	----	20000	<5	----	----	----	----	----	----	
Lead	EG005T	5	mg/kg	----	6000	9	----	----	----	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	4000	<2	----	----	----	----	----	----	
Nickel	EG005T	2	mg/kg	----	12000	12	----	----	----	----	----	----	
Selenium	EG005T	5	mg/kg	----	200	<5	----	----	----	----	----	----	
Silver	EG005T	2	mg/kg	----	720	<2	----	----	----	----	----	----	
Zinc	EG005T	5	mg/kg	----	140000	<5	----	----	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS													
Mercury	EG035T	0.1	mg/kg	----	300	<0.1	----	----	----	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)													
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<0.5	----	----	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser													
Total Cyanide	EK026SF	1	mg/kg	----	10000	<1	----	----	----	----	----	----	
EK040T: Fluoride Total													
Fluoride	EK040T	40	mg/kg	----	40000	180	----	----	----	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons													
Benzene	EP074-UT	0.2	mg/kg	----	16	<0.2	----	----	----	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	240	<0.2	----	----	----	----	----	----	
EP074I: Volatile Halogenated Compounds													
Vinyl chloride	EP074-UT	0.02	mg/kg	----	4.8	<0.02	----	----	----	----	----	----	
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	11	<0.02	----	----	----	----	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	50	<0.01	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)													
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	320	<0.03	----	----	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)													
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	2200	<1	----	----	----	----	----	----	
EP075B: Polynuclear Aromatic Hydrocarbons													
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	20	<0.5	----	----	----	----	----	----	



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

				Client sample ID			CPT_MW04_0 51218_0.5	----	----	----	----
				Sampling date/time	□□□□ □□	□□□□ □□	05-Dec-2018 14:35	----	----	----	----
Compound	Method	LOR	Unit	□□ □□ □□ □	□□□□ □□ □		EM1819646-014	-----	-----	-----	-----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	400	<0.5	----	----	----	----	----
EP075I: Organochlorine Pesticides											
Heptachlor	EP075-EM	0.03	mg/kg	----	4.8	<0.03	----	----	----	----	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	4.8	<0.03	----	----	----	----	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	<0.05	----	----	----	----	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	16	<0.03	----	----	----	----	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	50	<0.03	----	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	2600	<10	----	----	----	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	40000	<50	----	----	----	----	----

Table 2: Soil Hazard Categorisation Thresholds : Category C:

Client sample ID

Sub-Matrix: SOIL				Client sample ID		CPT_MW04_0 51218_0.5	----	----	----	----		
				Sampling date/time							□□□□ □□	□□□□ □□
				Compound	Method							
□□ □□	□□□□	----	----			----	----					
				□□ □□	□□ □□	EM1819646-014	-----	-----	-----	-----		
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	4	9	5.5	----	----	----	----		
EG005T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	500	5	----	----	----	----		
Cadmium	EG005T	1	mg/kg	----	100	<1	----	----	----	----		
Copper	EG005T	5	mg/kg	----	5000	<5	----	----	----	----		
Lead	EG005T	5	mg/kg	----	1500	9	----	----	----	----		
Molybdenum	EG005T	2	mg/kg	----	1000	<2	----	----	----	----		
Nickel	EG005T	2	mg/kg	----	3000	12	----	----	----	----		
Selenium	EG005T	5	mg/kg	----	50	<5	----	----	----	----		
Silver	EG005T	2	mg/kg	----	180	<2	----	----	----	----		
Tin	EG005T	5	mg/kg	----	500	<5	----	----	----	----		
Zinc	EG005T	5	mg/kg	----	35000	<5	----	----	----	----		
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	75	<0.1	----	----	----	----		
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	----	----	----	----		
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	----	----	----	----		
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	10000	180	----	----	----	----		
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	4	<0.2	----	----	----	----		
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	70	<0.2	----	----	----	----		
EP074I: Volatile Halogenated Compounds												
Vinyl chloride	EP074-UT	0.02	mg/kg	----	1.2	<0.02	----	----	----	----		
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	2.8	<0.02	----	----	----	----		
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	10	<0.01	----	----	----	----		
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	----	----	----	----		
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	560	<1	----	----	----	----		
EP075B: Polynuclear Aromatic Hydrocarbons												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

				Client sample ID			CPT_MW04_0 51218_0.5	----	----	----	----
				Sampling date/time	□□□□ □□	□□□□ □□	05-Dec-2018 14:35	----	----	----	----
Compound	Method	LOR	Unit	□□ □□ □□ □	□□□□ □□ □		EM1819646-014	-----	-----	-----	-----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	5	<0.5	----	----	----	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	100	<0.5	----	----	----	----	----
EP075I: Organochlorine Pesticides											
Heptachlor	EP075-EM	0.03	mg/kg	----	1.2	<0.03	----	----	----	----	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	1.2	<0.03	----	----	----	----	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	<0.05	----	----	----	----	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	4	<0.03	----	----	----	----	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	----	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	650	<10	----	----	----	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	10000	<50	----	----	----	----	----

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

Sampling date/time

Sub-Matrix: SOIL				Client sample ID		CPT_MW04_0 51218_0.5	----	----	----	----		
				Sampling date/time							□□□□ □□	□□□□ □□
Compound	Method	LOR	Unit	□□ □□ □□ □	□□□□ □□ □	EM1819646-014	-----	-----	-----	-----		
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	4	9	5.5	----	----	----	----		
EG005T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	20	5	----	----	----	----		
Cadmium	EG005T	1	mg/kg	----	3	<1	----	----	----	----		
Copper	EG005T	5	mg/kg	----	100	<5	----	----	----	----		
Lead	EG005T	5	mg/kg	----	300	9	----	----	----	----		
Molybdenum	EG005T	2	mg/kg	----	40	<2	----	----	----	----		
Nickel	EG005T	2	mg/kg	----	60	12	----	----	----	----		
Selenium	EG005T	5	mg/kg	----	10	<5	----	----	----	----		
Silver	EG005T	2	mg/kg	----	10	<2	----	----	----	----		
Tin	EG005T	5	mg/kg	----	50	<5	----	----	----	----		
Zinc	EG005T	5	mg/kg	----	200	<5	----	----	----	----		
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	1	<0.1	----	----	----	----		
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1	<0.5	----	----	----	----		
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	50	<1	----	----	----	----		
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	450	180	----	----	----	----		
EP066: Polychlorinated Biphenyls (PCB)												
Total Polychlorinated biphenyls	EP066-EM	0.1	mg/kg	----	2	<0.1	----	----	----	----		
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	1	<0.2	----	----	----	----		
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	7	<0.2	----	----	----	----		
EP074I: Volatile Halogenated Compounds												
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	1	<0.01	----	----	----	----		
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	----	----	----	----		
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	60	<1	----	----	----	----		
EP075B: Polynuclear Aromatic Hydrocarbons												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL				Client sample ID			CPT_MW04_0 51218_0.5	----	----	----	----
Sampling date/time							05-Dec-2018 14:35	----	----	----	----
Compound	Method	LOR	Unit				EM1819646-014	-----	-----	-----	-----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	1	<0.5	----	----	----	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	20	<0.5	----	----	----	----	----
EP075I: Organochlorine Pesticides											
Sum of organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	----	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	100	<10	----	----	----	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	1000	<50	----	----	----	----	----

QUALITY CONTROL REPORT

Work Order	: EM1819646	Page	: 1 of 21
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60582811	Date Samples Received	: 05-Dec-2018
Order number	: 60582811	Date Analysis Commenced	: 07-Dec-2018
C-O-C number	: ----	Issue Date	: 14-Dec-2018
Sampler	: [REDACTED]		
Site	: GIJPP Groundwater Study		
Quote number	: EN/096/18		
No. of samples received	: 22		
No. of samples analysed	: 15		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□□□ □□ □□

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

□□□□□

Senior Inorganic Chemist
Senior Inorganic Instrument Chemist
Senior Acid Sulfate Soil Chemist
Senior Organic Chemist
Senior Organic Chemist

□□□ □□□ □□ □□□

Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2086984)									
EM1819646-001	CPT_MW02_051218_0.2	EA001: pH (CaCl ₂)	----	0.1	pH Unit	4.8	4.8	0.00	0% - 20%
EM1819722-001	Anonymous	EA001: pH (CaCl ₂)	----	0.1	pH Unit	9.0	8.9	1.45	0% - 20%
EA026 : Chromium Reducible Sulfur (QC Lot: 2092562)									
EM1819646-003	CPT_MW02_051218_1.0	EA026: Chromium Reducible Sulphur	----	0.005	%	0.012	0.010	14.8	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2084237)									
EM1819646-001	CPT_MW02_051218_0.2	EA055: Moisture Content	----	0.1	%	20.1	21.1	4.69	0% - 20%
EM1819753-003	Anonymous	EA055: Moisture Content	----	0.1	%	7.8	7.8	0.00	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 2082092)									
EM1819636-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	12	14	17.9	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	14	16	13.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	12	15.6	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	19	20	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	28	34	17.2	No Limit
EM1819636-014	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	14	13	0.00	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	17	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QC Lot: 2082092) - continued									
EM1819636-014	Anonymous	EG005T: Lead	7439-92-1	5	mg/kg	12	12	0.00	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	23	24	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	40	34	17.9	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2082093)									
EM1819636-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1819636-014	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2085089)									
EM1819184-001	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1819184-023	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2087966)									
EM1819646-001	CPT_MW02_051218_0.2	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.00	No Limit
EM1819757-001	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.00	No Limit
EK040T: Fluoride Total (QC Lot: 2082099)									
EM1819563-001	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	120	100	18.5	No Limit
EM1819646-013	CPT_MW04_051218_0.2	EK040T: Fluoride	16984-48-8	40	mg/kg	40	50	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2084057)									
EM1819184-006	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1819646-007	CPT_MW03_051218_0.2	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2082081)									
EM1819646-001	CPT_MW02_051218_0.2	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1819757-001	Anonymous	EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2082081)									
EM1819646-001	CPT_MW02_051218_0.2	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EM1819757-001	Anonymous	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP074I: Volatile Halogenated Compounds (QC Lot: 2082081)									
EM1819646-001	CPT_MW02_051218_0.2	EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
EP074I: Volatile Halogenated Compounds (QC Lot: 2082081) - continued											
EM1819646-001	CPT_MW02_051218_0.2	EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.00	No Limit		
		EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit		
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.00	No Limit		
		EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit		
		EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.00	No Limit		
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.00	No Limit		
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.00	No Limit		
EM1819757-001	Anonymous	EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.00	No Limit		
		EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.00	No Limit		
		EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit		
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.00	No Limit		
		EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit		
		EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.00	No Limit		
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit		
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.00	No Limit		
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.00	No Limit		
		EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2084055)									
		EM1819184-006	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
				EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2084055) - continued									
EM1819184-006	Anonymous	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			207-08-9						
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1819646-007	CPT_MW03_051218_0.2	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			207-08-9						
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075I: Organochlorine Pesticides (QC Lot: 2084055)									
EM1819184-006	Anonymous	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075I: Organochlorine Pesticides (QC Lot: 2084055) - continued									
EM1819184-006	Anonymous	EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
EM1819646-007	CPT_MW03_051218_0.2	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2082081)									
EM1819646-001	CPT_MW02_051218_0.2	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EM1819757-001	Anonymous	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2084056)									
EM1819184-006	Anonymous	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2084056) - continued									
EM1819646-007	CPT_MW03_051218_0.2	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2082081)									
EM1819646-001	CPT_MW02_051218_0.2	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.00	No Limit
EM1819757-001	Anonymous	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2084056)									
EM1819184-006	Anonymous	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM1819646-007	CPT_MW03_051218_0.2	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA005P: pH by PC Titrator (QC Lot: 2088245)									
EM1819666-005	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.97	8.98	0.111	0% - 20%
EM1819582-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	2.91	2.91	0.00	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2087137)									
EM1819620-011	Anonymous	EG020B-F: Silver	7440-22-4	0.001	mg/L	0.006	0.002	93.8	No Limit
EM1819667-011	Anonymous	EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.010	<0.010	0.00	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2087138)									
EM1819620-011	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0006	0.0005	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.003	0.002	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.002	0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.016	0.016	0.00	0% - 50%
		EG020A-F: Tin	7440-31-5	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.047	0.045	5.15	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	0.01	0.01	0.00	No Limit
EM1819667-011	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0010	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.634	0.644	1.63	0% - 20%
		EG020A-F: Copper	7440-50-8	0.001	mg/L	1.47	1.37	7.04	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	0.00	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	1.45	1.44	0.990	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.929	0.941	1.30	0% - 20%



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2087138) - continued									
EM1819667-011	Anonymous	EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.010	<0.010	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.050	<0.050	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	0.13	0.13	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 2087139)									
EM1819646-019	CPT_QC302_051218	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1819799-007	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 2088241)									
EM1819246-007	Anonymous	EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2084271)									
EB1829756-004	Anonymous	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	0.004	0.004	0.00	No Limit
EM1819667-001	Anonymous	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	0.00	No Limit
EK040P: Fluoride by PC Titrator (QC Lot: 2088247)									
EM1819665-001	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	2.5	2.6	0.00	0% - 20%
EM1819759-006	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.6	0.6	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2083662)									
EM1819646-019	CPT_QC302_051218	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2083662)									
EM1819646-019	CPT_QC302_051218	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Methylene chloride	75-09-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2083662)									
EM1819646-019	CPT_QC302_051218	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2083662)									
EM1819646-019	CPT_QC302_051218	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2083655)									
EM1819184-025	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1819699-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2083663)									
EM1819829-010	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1819646-019	CPT_QC302_051218	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2083655)									
EM1819184-025	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1819699-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2083663)									
EM1819829-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1819646-019	CPT_QC302_051218	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2083655)									
EM1819184-025	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
EM1819699-002	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EP080: BTEXN (QC Lot: 2083663)									
EM1819829-010	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
EM1819646-019	CPT_QC302_051218	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 2083663) - continued									
EM1819646-019	CPT_QC302_051218	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EA026 : Chromium Reducible Sulfur (QCLot: 2092562)								
EA026: Chromium Reducible Sulphur	----	0.005	%	<0.005	0.25483 %	85.9	70	130
EG005T: Total Metals by ICP-AES (QCLot: 2082092)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	87.5	78	107
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	83.1	76	108
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	83.5	78	108
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	84.7	78	106
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	81.7	78	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	88.8	80	109
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	98.1	92	110
EG005T: Silver	7440-22-4	2	mg/kg	<2	2.1 mg/kg	96.0	80	108
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.2 mg/kg	104	78	117
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	92.6	79	110
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2082093)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	90.7	77	104
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2085089)								
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	75.2	75	112
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2087966)								
EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	20 mg/kg	103	80	107
EK040T: Fluoride Total (QCLot: 2082099)								
EK040T: Fluoride	16984-48-8	40	mg/kg	<40	400 mg/kg	86.8	75	110
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2084057)								
EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	104	63	118
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2082081)								
EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	2.1 mg/kg	87.8	68	117
EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	2.1 mg/kg	87.3	67	118
EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.1 mg/kg	85.4	66	119
EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	4.2 mg/kg	85.6	66	115
	106-42-3							
EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	2.1 mg/kg	87.5	71	115
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2.1 mg/kg	86.9	68	113
EP074H: Naphthalene (QCLot: 2082081)								
EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	0.6 mg/kg	99.1	75	113
EP074I: Volatile Halogenated Compounds (QCLot: 2082081)								



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP074I: Volatile Halogenated Compounds (QCLot: 2082081) - continued								
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	77.4	51	136
EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	78.9	56	125
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	91.1	70	117
EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	87.6	61	122
EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	89.3	70	114
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	89.0	69	112
EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	86.1	62	124
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	83.2	56	126
EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	91.3	73	118
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	89.0	66	117
EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	91.0	76	115
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	81.2	62	120
EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	0.1 mg/kg	88.7	71	118
EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	84.1	69	119
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	91.1	47	125
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	88.6	73	114
EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	88.7	66	114
EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	89.0	73	110
EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	88.6	54	121
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2084055)								
EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	2 mg/kg	97.7	69	123
EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	2 mg/kg	115	55	128
EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	2 mg/kg	111	70	123
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	2 mg/kg	111	56	128
EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	2 mg/kg	116	66	126
EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	2 mg/kg	117	60	126
EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	4 mg/kg	104	65	124
EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/5	0.05	mg/kg	<0.05	8 mg/kg	76.4	64	128
	8-90-2							
EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	4 mg/kg	111	43	127
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2084055)								
EP075-EM: Phenol	108-95-2	1	mg/kg	<1	2 mg/kg	98.2	58	126
EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	2 mg/kg	105	65	126
EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	4 mg/kg	105	64	123
EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	2 mg/kg	109	53	128
EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	2 mg/kg	111	56	136
EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	12 mg/kg	94.7	41	156
EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	12 mg/kg	94.0	48	130
EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	12 mg/kg	94.2	47	125



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2084055) - continued								
EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	12 mg/kg	90.5	51	123
EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<5	10 mg/kg	114	36	137
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2084055)								
EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	2 mg/kg	110	70	123
EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	2 mg/kg	107	70	130
EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	2 mg/kg	117	68	131
EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	2 mg/kg	110	72	128
EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	2 mg/kg	111	75	128
EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	2 mg/kg	114	55	127
EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	2 mg/kg	118	75	128
EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	2 mg/kg	124	73	130
EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	2 mg/kg	123	72	131
EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	2 mg/kg	123	77	133
EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	4 mg/kg	116	76	133
EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	2 mg/kg	116	70	130
EP075-EM: Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	2 mg/kg	104	72	134
EP075-EM: Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	2 mg/kg	105	72	135
EP075-EM: Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	2 mg/kg	104	71	134
EP075I: Organochlorine Pesticides (QCLot: 2084055)								
EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	2 mg/kg	110	71	122
EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	2 mg/kg	95.0	70	126
EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	2 mg/kg	108	70	130
EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	2 mg/kg	104	71	129
EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	2 mg/kg	123	74	128
EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	2 mg/kg	108	72	126
EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	2 mg/kg	110	72	127
EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	2 mg/kg	109	73	129
EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	2 mg/kg	105	72	131
EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	2 mg/kg	104	73	130
EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	2 mg/kg	109	64	137
EP075-EM: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	2 mg/kg	120	73	131
EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	2 mg/kg	114	72	132
EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	2 mg/kg	144	42	160
EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	2 mg/kg	64.0	55	148
EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	2 mg/kg	124	73	132
EP075-EM: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	2 mg/kg	124	75	134
EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	2 mg/kg	102	73	133
EP075-EM: 4,4`-DDT	50-29-3	0.05	mg/kg	<0.05	2 mg/kg	# 137	67	133

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075I: Organochlorine Pesticides (QCLot: 2084055) - continued								
EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	2 mg/kg	110	67	135
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2082081)								
EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	39.6 mg/kg	85.3	63	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2084056)								
EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	806 mg/kg	108	70	120
EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	3006 mg/kg	112	83	121
EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	1584 mg/kg	105	77	117
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2082081)								
EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	48.9 mg/kg	84.5	62	121
EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2084056)								
EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	1160 mg/kg	110	75	119
EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	3978 mg/kg	110	82	119
EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	313 mg/kg	98.2	68	124

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2087137)								
EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	0.02 mg/L	97.7	84	116
EG020F: Dissolved Metals by ICP-MS (QCLot: 2087138)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.8	91	107
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	90.9	84	104
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	91.0	82	103
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	83	105
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	103	83	109
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.0	82	106
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	95.6	82	109
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	99.4	83	109
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	95.9	85	109
EG035F: Dissolved Mercury by FIMS (QCLot: 2087139)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.0	76	114
EG050F: Dissolved Hexavalent Chromium (QCLot: 2088241)								
EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.5 mg/L	103	92	111
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2084271)								
EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	0.2 mg/L	100	75	109
EK040P: Fluoride by PC Titrator (QCLot: 2088247)								



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EK040P: Fluoride by PC Titrator (QCLot: 2088247) - continued								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	112	87	117
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2081981)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	119	48	124
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2083662)								
EP074: Styrene	100-42-5	5	µg/L	<5	20 µg/L	109	79	114
EP074E: Halogenated Aliphatic Compounds (QCLot: 2083662)								
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	200 µg/L	106	64	139
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	20 µg/L	107	65	124
EP074: Methylene chloride	75-09-2	5	µg/L	<5	20 µg/L	101	81	144
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	20 µg/L	102	73	121
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	20 µg/L	106	78	120
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	20 µg/L	107	68	116
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	20 µg/L	106	66	119
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	20 µg/L	96.1	79	118
EP074: Trichloroethene	79-01-6	5	µg/L	<5	20 µg/L	104	70	120
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	20 µg/L	105	87	114
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	20 µg/L	108	75	119
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	20 µg/L	106	75	112
EP074: 1.1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	20 µg/L	108	81	125
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	20 µg/L	107	63	126
EP074F: Halogenated Aromatic Compounds (QCLot: 2083662)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	20 µg/L	110	82	114
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	20 µg/L	104	76	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	20 µg/L	99.7	82	112
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	20 µg/L	107	62	119
EP074G: Trihalomethanes (QCLot: 2083662)								
EP074: Chloroform	67-66-3	5	µg/L	<5	20 µg/L	106	79	119
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2081982)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	74.6	48	110
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	79.5	50	117
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	73.7	53	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	75.2	54	118
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	76.5	59	119
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	74.8	51	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	76.6	61	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	66.8	56	120
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	78.1	53	120
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	76.6	57	122



Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2081982) - continued								
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	93.5	56	131
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	82.0	59	124
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	89.4	54	124
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	83.8	55	124
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	84.8	54	124
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	86.4	56	124
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2081987)								
EP075-EM: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	81.2	54	117
EP075-EM: 2,4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	98.8	46	116
EP075-EM: 2,6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	104	61	123
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	4	µg/L	<4	10 µg/L	106	45	116
EP075-EM: 2,4,5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	104	57	131
EP075-EM: 2,4,6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	108	42	126
EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	2	µg/L	<2	20 µg/L	93.8	54	136
EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/5	2	µg/L	<2	40 µg/L	76.7	53	125
	8-90-2							
EP075-EM: Pentachlorophenol	87-86-5	2	µg/L	<2	20 µg/L	83.1	32	122
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2081987)								
EP075-EM: Phenol	108-95-2	4	µg/L	<4	10 µg/L	36.6	18	51
EP075-EM: 2-Methylphenol	95-48-7	4	µg/L	<4	10 µg/L	80.7	49	106
EP075-EM: 3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	20 µg/L	77.0	41	91
EP075-EM: 2-Nitrophenol	88-75-5	4	µg/L	<4	10 µg/L	105	48	120
EP075-EM: 2,4-Dimethylphenol	105-67-9	4	µg/L	<4	10 µg/L	100	47	128
EP075-EM: 2,4-Dinitrophenol	51-28-5	100	µg/L	<100	60 µg/L	66.8	41	130
EP075-EM: 4-Nitrophenol	100-02-7	50	µg/L	<50	60 µg/L	27.9	19	49
EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	50	µg/L	<50	60 µg/L	74.2	47	126
EP075-EM: Dinoseb	88-85-7	50	µg/L	<50	60 µg/L	84.6	49	128
EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	50	µg/L	<50	50 µg/L	95.6	61	135
EP075I: Organochlorine Pesticides (QCLot: 2081987)								
EP075-EM: alpha-BHC	319-84-6	0.5	µg/L	<0.5	10 µg/L	98.4	57	126
EP075-EM: Heptachlor	76-44-8	0.5	µg/L	<0.5	10 µg/L	99.8	62	134
EP075-EM: Aldrin	309-00-2	0.5	µg/L	<0.5	10 µg/L	97.8	58	133
EP075-EM: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	10 µg/L	98.9	60	133
EP075-EM: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	10 µg/L	97.7	59	132
EP075-EM: 4,4'-DDE	72-55-9	0.5	µg/L	<0.5	10 µg/L	100.0	61	137
EP075-EM: Dieldrin	60-57-1	0.5	µg/L	<0.5	10 µg/L	92.8	59	130
EP075-EM: 4,4'-DDD	72-54-8	0.5	µg/L	<0.5	10 µg/L	98.0	59	135



Sub-Matrix: **WATER**

Method Blank (MB) Report				Laboratory Control Spike (LCS) Report				
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
					LCS	Low	High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075I: Organochlorine Pesticides (QCLot: 2081987) - continued								
EP075-EM: 4,4'-DDT	50-29-3	0.5	µg/L	<0.5	10 µg/L	101	59	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2081983)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	4331 µg/L	84.4	51	136
EP071: C15 - C28 Fraction	----	100	µg/L	<100	16952 µg/L	89.3	58	139
EP071: C29 - C36 Fraction	----	50	µg/L	<50	8695 µg/L	88.8	57	134
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2083655)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	97.8	65	126
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2083663)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	99.4	65	126
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2081983)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	6292 µg/L	85.3	55	134
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	22143 µg/L	89.2	58	135
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1677 µg/L	94.2	57	137
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2083655)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	96.8	64	124
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2083663)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	99.6	64	124
EP080: BTEXN (QCLot: 2083655)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	99.0	69	123
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	103	73	124
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	106	71	125
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	105	72	129
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	111	76	129
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	103	70	125
EP080: BTEXN (QCLot: 2083663)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	110	69	123
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	102	73	124
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	106	71	125
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	104	72	129
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	107	76	129
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	111	70	125

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2082092)							
EM1819636-003	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	91.0	78	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	89.5	84	116
		EG005T: Copper	7440-50-8	50 mg/kg	96.5	82	124
		EG005T: Lead	7439-92-1	50 mg/kg	86.6	76	124
		EG005T: Molybdenum	7439-98-7	50 mg/kg	97.0	79	117
		EG005T: Nickel	7440-02-0	50 mg/kg	90.6	78	120
		EG005T: Selenium	7782-49-2	50 mg/kg	82.4	71	125
		EG005T: Zinc	7440-66-6	50 mg/kg	85.6	74	128
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2082093)							
EM1819636-003	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	102	76	116
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2085089)							
EM1819184-003	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	40 mg/kg	67.6	58	114
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2087966)							
EM1819646-002	CPT_MW02_051218_0.5	EK026SF: Total Cyanide	57-12-5	20 mg/kg	95.8	77	113
EK040T: Fluoride Total (QCLot: 2082099)							
EM1819563-003	Anonymous	EK040T: Fluoride	16984-48-8	400 mg/kg	87.2	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2084057)							
EM1819184-013	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	1 mg/kg	107	36	152
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2082081)							
EM1819646-002	CPT_MW02_051218_0.5	EP074-UT: Benzene	71-43-2	2 mg/kg	112	50	138
		EP074-UT: Toluene	108-88-3	2 mg/kg	109	56	134
EP074I: Volatile Halogenated Compounds (QCLot: 2082081)							
EM1819646-002	CPT_MW02_051218_0.5	EP074-UT: 1,1-Dichloroethene	75-35-4	2 mg/kg	110	26	141
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	104	50	134
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	108	28	134
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2084055)							
EM1819184-010	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	1 mg/kg	102	34	118
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	1 mg/kg	116	41	139
		EP075-EM: Pentachlorophenol	87-86-5	1 mg/kg	98.0	10	144
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2084055)							
EM1819184-010	Anonymous	EP075-EM: Phenol	108-95-2	1 mg/kg	105	32	134
		EP075-EM: 2-Nitrophenol	88-75-5	1 mg/kg	104	13	129
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2084055)							
EM1819184-010	Anonymous	EP075-EM: Acenaphthene	83-32-9	1 mg/kg	112	46	138
		EP075-EM: Pyrene	129-00-0	1 mg/kg	113	27	169

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2082081)							
EM1819646-002	CPT_MW02_051218_0.5	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	77.5	43	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2084056)							
EM1819184-012	Anonymous	EP071-EM: C10 - C14 Fraction	----	806 mg/kg	98.3	53	123
		EP071-EM: C15 - C28 Fraction	----	3006 mg/kg	104	70	124
		EP071-EM: C29 - C36 Fraction	----	1584 mg/kg	98.8	64	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2082081)							
EM1819646-002	CPT_MW02_051218_0.5	EP074-UT: C6 - C10 Fraction	C6_C10	33 mg/kg	72.7	42	106
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2084056)							
EM1819184-012	Anonymous	EP071-EM: >C10 - C16 Fraction	----	1160 mg/kg	101	65	123
		EP071-EM: >C16 - C34 Fraction	----	3978 mg/kg	103	67	121
		EP071-EM: >C34 - C40 Fraction	----	313 mg/kg	91.4	44	126
Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2087138)							
EM1819620-011	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	101	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	81.5	81	133
		EG020A-F: Copper	7440-50-8	0.2 mg/L	89.6	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	93.1	75	133
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	91.5	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	83.2	75	131
EG035F: Dissolved Mercury by FIMS (QCLot: 2087139)							
EM1819667-038	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	# 20.6	70	120
EG050F: Dissolved Hexavalent Chromium (QCLot: 2088241)							
EM1819646-019	CPT_QC302_051218	EG050F: Hexavalent Chromium	18540-29-9	0.5 mg/L	99.2	59	127
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2084271)							
EB1829756-005	Anonymous	EK026SF: Total Cyanide	57-12-5	0.2 mg/L	101	70	130
EK040P: Fluoride by PC Titrator (QCLot: 2088247)							
EM1819666-001	Anonymous	EK040P: Fluoride	16984-48-8	10 mg/L	111	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2083662)							
EM1819787-005	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	20 µg/L	114	40	124
		EP074: Trichloroethene	79-01-6	20 µg/L	98.7	54	126
EP074F: Halogenated Aromatic Compounds (QCLot: 2083662)							
EM1819787-005	Anonymous	EP074: Chlorobenzene	108-90-7	20 µg/L	100	68	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2083655)							



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2083655) - continued							
EM1819184-026	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	78.3	43	125
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2083663)							
EM1819787-005	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	88.8	43	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2083655)							
EM1819184-026	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	76.7	44	122
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2083663)							
EM1819787-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	88.5	44	122
EP080: BTEXN (QCLot: 2083655)							
EM1819184-026	Anonymous	EP080: Benzene	71-43-2	20 µg/L	97.6	68	130
		EP080: Toluene	108-88-3	20 µg/L	96.2	72	132
EP080: BTEXN (QCLot: 2083663)							
EM1819787-005	Anonymous	EP080: Benzene	71-43-2	20 µg/L	114	68	130
		EP080: Toluene	108-88-3	20 µg/L	106	72	132

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1819646**

Page : 1 of 14

Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Project : 60582811
Site : GIJPP Groundwater Study
Sampler : SM
Order number : 60582811

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 05-Dec-2018
Issue Date : 14-Dec-2018
No. of samples received : 22
No. of samples analysed : 15

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank** value outliers occur.
- **NO Duplicate** outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075I: Organochlorine Pesticides	QC-2084055-001	----	4,4'-DDT	50-29-3	137 %	67-133%	Recovery greater than upper control limit

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG035F: Dissolved Mercury by FIMS	EM1819667--038	Anonymous	Mercury	7439-97-6	20.6 %	70-120%	Recovery less than lower data quality objective

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural CPT_QC302_051218	----	----	----	12-Dec-2018	05-Dec-2018	7

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA001: pH in soil using 0.01M CaCl extract								
Soil Glass Jar - Unpreserved (EA001) CPT_MW02_051218_0.2, CPT_MW03_051218_0.2, CPT_MW04_051218_0.2,	CPT_MW02_051218_0.5, CPT_MW03_051218_0.5, CPT_MW04_051218_0.5	05-Dec-2018	11-Dec-2018	12-Dec-2018	✓	11-Dec-2018	11-Dec-2018	✓
EA026 : Chromium Reducible Sulfur								
Snap Lock Bag - frozen on receipt at ALS (EA026) CPT_MW02_051218_1.0, CPT_MW03_051218_1.0, CPT_MW04_051218_0.5,	CPT_MW02_051218_2.0, CPT_MW03_051218_3.0, CPT_MW04_051218_2.0	05-Dec-2018	13-Dec-2018	30-Aug-2021	✓	13-Dec-2018	13-Mar-2019	✓
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055) CPT_MW02_051218_0.2, CPT_MW03_051218_0.2, CPT_MW04_051218_0.2,	CPT_MW02_051218_0.5, CPT_MW03_051218_0.5, CPT_MW04_051218_0.5	05-Dec-2018	----	----	----	10-Dec-2018	19-Dec-2018	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) CPT_MW02_051218_0.2, CPT_MW03_051218_0.2, CPT_MW04_051218_0.2,	CPT_MW02_051218_0.5, CPT_MW03_051218_0.5, CPT_MW04_051218_0.5	05-Dec-2018	07-Dec-2018	03-Jun-2019	✓	07-Dec-2018	03-Jun-2019	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T) CPT_MW02_051218_0.2, CPT_MW03_051218_0.2, CPT_MW04_051218_0.2,	CPT_MW02_051218_0.5, CPT_MW03_051218_0.5, CPT_MW04_051218_0.5	05-Dec-2018	07-Dec-2018	02-Jan-2019	✓	08-Dec-2018	02-Jan-2019	✓
EG048: Hexavalent Chromium (Alkaline Digest)								
Soil Glass Jar - Unpreserved (EG048G) CPT_MW02_051218_0.2, CPT_MW03_051218_0.2, CPT_MW04_051218_0.2,	CPT_MW02_051218_0.5, CPT_MW03_051218_0.5, CPT_MW04_051218_0.5	05-Dec-2018	10-Dec-2018	02-Jan-2019	✓	10-Dec-2018	17-Dec-2018	✓
EK026SF: Total CN by Segmented Flow Analyser								
Soil Glass Jar - Unpreserved (EK026SF) CPT_MW02_051218_0.2, CPT_MW03_051218_0.2, CPT_MW04_051218_0.2,	CPT_MW02_051218_0.5, CPT_MW03_051218_0.5, CPT_MW04_051218_0.5	05-Dec-2018	11-Dec-2018	19-Dec-2018	✓	12-Dec-2018	25-Dec-2018	✓
EK040T: Fluoride Total								
Soil Glass Jar - Unpreserved (EK040T) CPT_MW02_051218_0.2, CPT_MW03_051218_0.2, CPT_MW04_051218_0.2,	CPT_MW02_051218_0.5, CPT_MW03_051218_0.5, CPT_MW04_051218_0.5	05-Dec-2018	07-Dec-2018	02-Jan-2019	✓	11-Dec-2018	02-Jan-2019	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066-EM)		05-Dec-2018	10-Dec-2018	19-Dec-2018	✓	10-Dec-2018	19-Jan-2019	✓
CPT_MW02_051218_0.2,	CPT_MW02_051218_0.5,							
CPT_MW03_051218_0.2,	CPT_MW03_051218_0.5,							
CPT_MW04_051218_0.2,	CPT_MW04_051218_0.5							
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074-UT)		05-Dec-2018	07-Dec-2018	12-Dec-2018	✓	07-Dec-2018	12-Dec-2018	✓
CPT_MW02_051218_0.2,	CPT_MW02_051218_0.5,							
CPT_MW03_051218_0.2,	CPT_MW03_051218_0.5,							
CPT_MW04_051218_0.2,	CPT_MW04_051218_0.5							
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074-UT)		05-Dec-2018	07-Dec-2018	12-Dec-2018	✓	07-Dec-2018	12-Dec-2018	✓
CPT_MW02_051218_0.2,	CPT_MW02_051218_0.5,							
CPT_MW03_051218_0.2,	CPT_MW03_051218_0.5,							
CPT_MW04_051218_0.2,	CPT_MW04_051218_0.5							
EP074I: Volatile Halogenated Compounds								
Soil Glass Jar - Unpreserved (EP074-UT)		05-Dec-2018	07-Dec-2018	12-Dec-2018	✓	07-Dec-2018	12-Dec-2018	✓
CPT_MW02_051218_0.2,	CPT_MW02_051218_0.5,							
CPT_MW03_051218_0.2,	CPT_MW03_051218_0.5,							
CPT_MW04_051218_0.2,	CPT_MW04_051218_0.5							
EP075A: Phenolic Compounds (Halogenated)								
Soil Glass Jar - Unpreserved (EP075-EM)		05-Dec-2018	10-Dec-2018	19-Dec-2018	✓	10-Dec-2018	19-Jan-2019	✓
CPT_MW02_051218_0.2,	CPT_MW02_051218_0.5,							
CPT_MW03_051218_0.2,	CPT_MW03_051218_0.5,							
CPT_MW04_051218_0.2,	CPT_MW04_051218_0.5							
EP075A: Phenolic Compounds (Non-halogenated)								
Soil Glass Jar - Unpreserved (EP075-EM)		05-Dec-2018	10-Dec-2018	19-Dec-2018	✓	10-Dec-2018	19-Jan-2019	✓
CPT_MW02_051218_0.2,	CPT_MW02_051218_0.5,							
CPT_MW03_051218_0.2,	CPT_MW03_051218_0.5,							
CPT_MW04_051218_0.2,	CPT_MW04_051218_0.5							
EP075B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075-EM)		05-Dec-2018	10-Dec-2018	19-Dec-2018	✓	10-Dec-2018	19-Jan-2019	✓
CPT_MW02_051218_0.2,	CPT_MW02_051218_0.5,							
CPT_MW03_051218_0.2,	CPT_MW03_051218_0.5,							
CPT_MW04_051218_0.2,	CPT_MW04_051218_0.5							
EP075I: Organochlorine Pesticides								
Soil Glass Jar - Unpreserved (EP075-EM)		05-Dec-2018	10-Dec-2018	19-Dec-2018	✓	10-Dec-2018	19-Jan-2019	✓
CPT_MW02_051218_0.2,	CPT_MW02_051218_0.5,							
CPT_MW03_051218_0.2,	CPT_MW03_051218_0.5,							
CPT_MW04_051218_0.2,	CPT_MW04_051218_0.5							



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074-UT)		05-Dec-2018	07-Dec-2018	12-Dec-2018	✔	07-Dec-2018	12-Dec-2018	✔
CPT_MW02_051218_0.2,	CPT_MW02_051218_0.5,							
CPT_MW03_051218_0.2,	CPT_MW03_051218_0.5,							
CPT_MW04_051218_0.2,	CPT_MW04_051218_0.5							
Soil Glass Jar - Unpreserved (EP071-EM)		05-Dec-2018	10-Dec-2018	19-Dec-2018	✔	10-Dec-2018	19-Jan-2019	✔
CPT_MW02_051218_0.2,	CPT_MW02_051218_0.5,							
CPT_MW03_051218_0.2,	CPT_MW03_051218_0.5,							
CPT_MW04_051218_0.2,	CPT_MW04_051218_0.5							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP074-UT)		05-Dec-2018	07-Dec-2018	12-Dec-2018	✔	07-Dec-2018	12-Dec-2018	✔
CPT_MW02_051218_0.2,	CPT_MW02_051218_0.5,							
CPT_MW03_051218_0.2,	CPT_MW03_051218_0.5,							
CPT_MW04_051218_0.2,	CPT_MW04_051218_0.5							
Soil Glass Jar - Unpreserved (EP071-EM)		05-Dec-2018	10-Dec-2018	19-Dec-2018	✔	10-Dec-2018	19-Jan-2019	✔
CPT_MW02_051218_0.2,	CPT_MW02_051218_0.5,							
CPT_MW03_051218_0.2,	CPT_MW03_051218_0.5,							
CPT_MW04_051218_0.2,	CPT_MW04_051218_0.5							

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) CPT_QC302_051218	05-Dec-2018	----	----	----	12-Dec-2018	05-Dec-2018	✖
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F) CPT_QC302_051218	05-Dec-2018	----	----	----	13-Dec-2018	03-Jun-2019	✔
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) CPT_QC302_051218	05-Dec-2018	----	----	----	13-Dec-2018	02-Jan-2019	✔
EG050F: Dissolved Hexavalent Chromium							
Opaque plastic bottle - NaOH (EG050F) CPT_QC302_051218	05-Dec-2018	----	----	----	11-Dec-2018	02-Jan-2019	✔
EK026SF: Total CN by Segmented Flow Analyser							
Opaque plastic bottle - NaOH (EK026SF) CPT_QC302_051218	05-Dec-2018	----	----	----	10-Dec-2018	19-Dec-2018	✔
EK040P: Fluoride by PC Titrator							
Clear Plastic Bottle - Natural (EK040P) CPT_QC302_051218	05-Dec-2018	----	----	----	12-Dec-2018	02-Jan-2019	✔



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066) CPT_QC302_051218	05-Dec-2018	07-Dec-2018	12-Dec-2018	✓	10-Dec-2018	16-Jan-2019	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC302_051218	05-Dec-2018	10-Dec-2018	19-Dec-2018	✓	10-Dec-2018	19-Dec-2018	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC302_051218	05-Dec-2018	10-Dec-2018	19-Dec-2018	✓	10-Dec-2018	19-Dec-2018	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC302_051218	05-Dec-2018	10-Dec-2018	19-Dec-2018	✓	10-Dec-2018	19-Dec-2018	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC302_051218	05-Dec-2018	10-Dec-2018	19-Dec-2018	✓	10-Dec-2018	19-Dec-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) CPT_QC302_051218	05-Dec-2018	07-Dec-2018	12-Dec-2018	✓	10-Dec-2018	16-Jan-2019	✓
EP075A: Phenolic Compounds (Halogenated)							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC302_051218	05-Dec-2018	10-Dec-2018	12-Dec-2018	✓	10-Dec-2018	19-Jan-2019	✓
EP075A: Phenolic Compounds (Non-halogenated)							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC302_051218	05-Dec-2018	10-Dec-2018	12-Dec-2018	✓	10-Dec-2018	19-Jan-2019	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC302_051218	05-Dec-2018	10-Dec-2018	12-Dec-2018	✓	10-Dec-2018	19-Jan-2019	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) CPT_QC302_051218	05-Dec-2018	07-Dec-2018	12-Dec-2018	✓	10-Dec-2018	16-Jan-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC302_051218, CPT_QC402_051218, CPT_QC504_051218, CPT_QC505_051218	05-Dec-2018	10-Dec-2018	19-Dec-2018	✓	10-Dec-2018	19-Dec-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) CPT_QC302_051218	05-Dec-2018	07-Dec-2018	12-Dec-2018	✓	10-Dec-2018	16-Jan-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC302_051218, CPT_QC402_051218, CPT_QC504_051218, CPT_QC505_051218	05-Dec-2018	10-Dec-2018	19-Dec-2018	✓	10-Dec-2018	19-Dec-2018	✓



Matrix: **WATER** Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
CPT_QC302_051218,	CPT_QC402_051218,	05-Dec-2018	10-Dec-2018	19-Dec-2018	✓	10-Dec-2018	19-Dec-2018	✓
CPT_QC504_051218,	CPT_QC505_051218							



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Chromium Reducible Sulphur	EA026	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	10	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chromium Reducible Sulphur	EA026	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chromium Reducible Sulphur	EA026	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Method Blanks (MB)



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Dissolved Mercury by FIMS	EG035F	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	1	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	1	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	0	1	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001	SOIL	In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3)
Chromium Reducible Sulphur	EA026	SOIL	In house: Referenced to Sullivan et al (1998) The CRS method converts reduced inorganic sulfur to H ₂ S by CrCl ₂ solution ; the evolved H ₂ S is trapped in a zinc acetate solution as ZnS which is quantified by iodometric titration.
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	SOIL	In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3)
Total Fluoride	EK040T	SOIL	(In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
PCB - VIC EPA 448.3 Screen	EP066-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
TRH - Semivolatile Fraction	EP071-EM	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.



Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds - Ultra-trace	EP074-UT	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)
Volatile Organic Compounds - Ultra-trace - Summations	EP074-UT-SUM	SOIL	Summation of MAHs and VHCs
Semivolatile Organic Compounds - Waste Classification	EP075-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502)
SVOC - Waste Classification (Sums)	EP075-EM-SUM	SOIL	Summations for EP075 (EM variation)
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Metals by ICP-MS - Suite B	EG020B-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium - Dissolved	EG050F	WATER	In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	WATER	In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)



Analytical Methods	Method	Matrix	Method Descriptions
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Semivolatile Organic Compounds - Waste Classification	EP075-EM	WATER	In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Preparation Methods	Method	Matrix	Method Descriptions
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH.
pH in soil using a 0.01M CaCl ₂ extract	EA001-PR	SOIL	In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
Total Fluoride	EK040T-PR	SOIL	In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux.
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Methanolic Extraction of Soils - Ultra-trace.	ORG16-UT	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids - VIC EPA Screen	ORG17-EM	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.



<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Separatory Funnel Extraction of Liquids	ORG14-EM	WATER	In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1819646**

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [REDACTED]	E-mail	: [REDACTED]@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60582811	Page	: 1 of 3
Order number	: ----	Quote number	: EP2016AECOMAU0014 (EN/096/18)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: GIJPP Groundwater Study		
Sampler	: [REDACTED] M		

Dates

Date Samples Received	: 05-Dec-2018 17:25	Issue Date	: 07-Dec-2018
Client Requested Due Date	: 13-Dec-2018	Scheduled Reporting Date	: 13-Dec-2018

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 2	Temperature	: 3.8°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 22 / 15

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale & ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

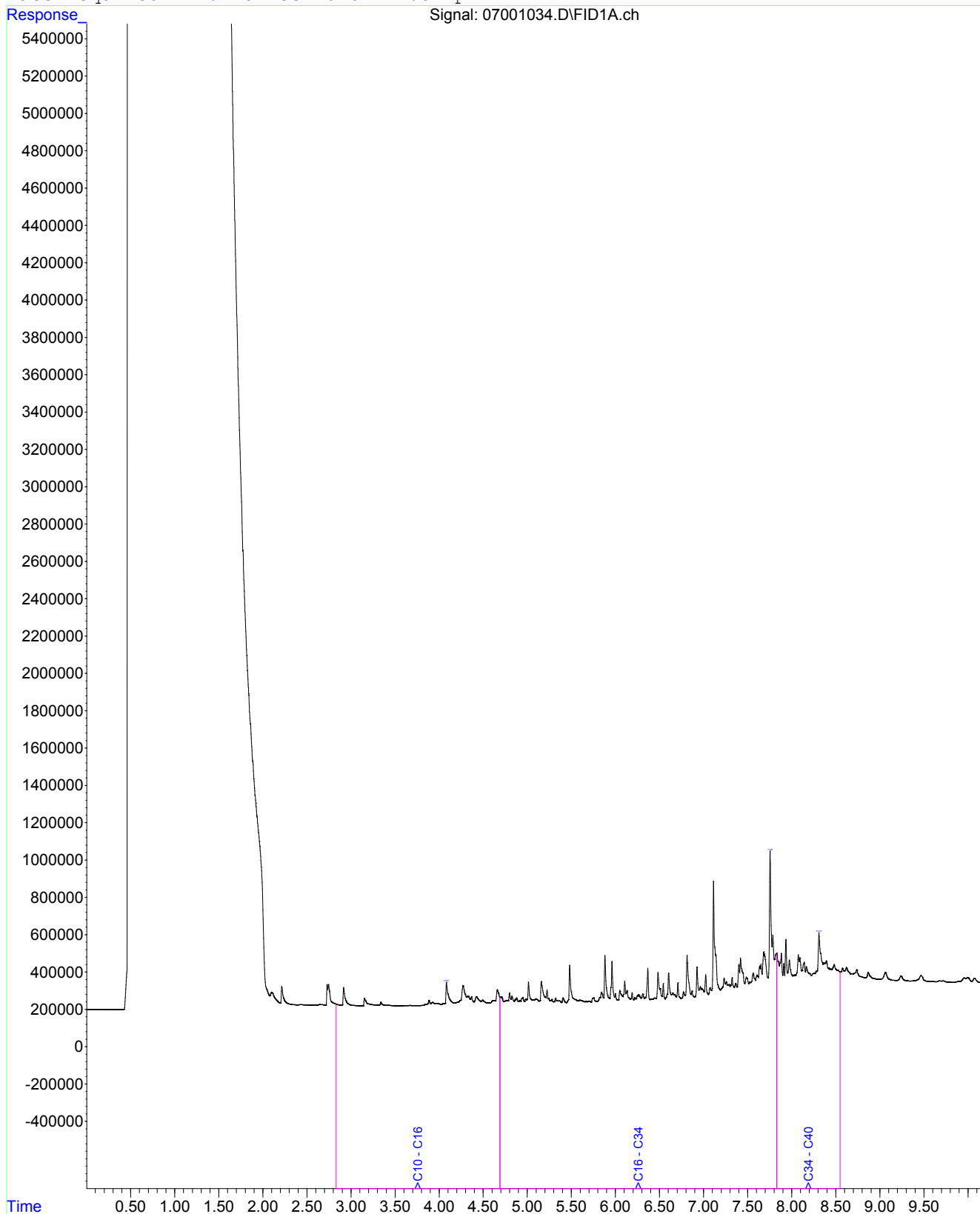
Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA026 Chromium Reducible Sulphur	SOIL - EA055-103 Moisture Content	SOIL - P-16 IWRG 621
EM1819646-001	05-Dec-2018 10:00	CPT_MW02_051218_0.2			✓	✓
EM1819646-002	05-Dec-2018 10:05	CPT_MW02_051218_0.5			✓	✓
EM1819646-003	05-Dec-2018 10:10	CPT_MW02_051218_1.0		✓		
EM1819646-004	05-Dec-2018 10:15	CPT_MW02_051218_2.0		✓		
EM1819646-005	05-Dec-2018 10:20	CPT_MW02_051218_3.0	✓			
EM1819646-006	05-Dec-2018 10:25	CPT_MW02_051218_4.0	✓			
EM1819646-007	05-Dec-2018 13:10	CPT_MW03_051218_0.2			✓	✓
EM1819646-008	05-Dec-2018 13:15	CPT_MW03_051218_0.5			✓	✓
EM1819646-009	05-Dec-2018 13:20	CPT_MW03_051218_1.0		✓		
EM1819646-010	05-Dec-2018 13:25	CPT_MW03_051218_2.0	✓			
EM1819646-011	05-Dec-2018 13:30	CPT_MW03_051218_3.0		✓		
EM1819646-012	05-Dec-2018 13:30	CPT_MW03_051218_4.0	✓			
EM1819646-013	05-Dec-2018 14:30	CPT_MW04_051218_0.2			✓	✓
EM1819646-014	05-Dec-2018 14:35	CPT_MW04_051218_0.5		✓	✓	✓
EM1819646-015	05-Dec-2018 14:40	CPT_MW04_051218_1.0	✓			
EM1819646-016	05-Dec-2018 14:45	CPT_MW04_051218_2.0		✓		
EM1819646-017	05-Dec-2018 14:50	CPT_MW04_051218_3.0	✓			
EM1819646-018	05-Dec-2018 14:55	CPT_MW04_051218_4.0	✓			

Matrix: **WATER**

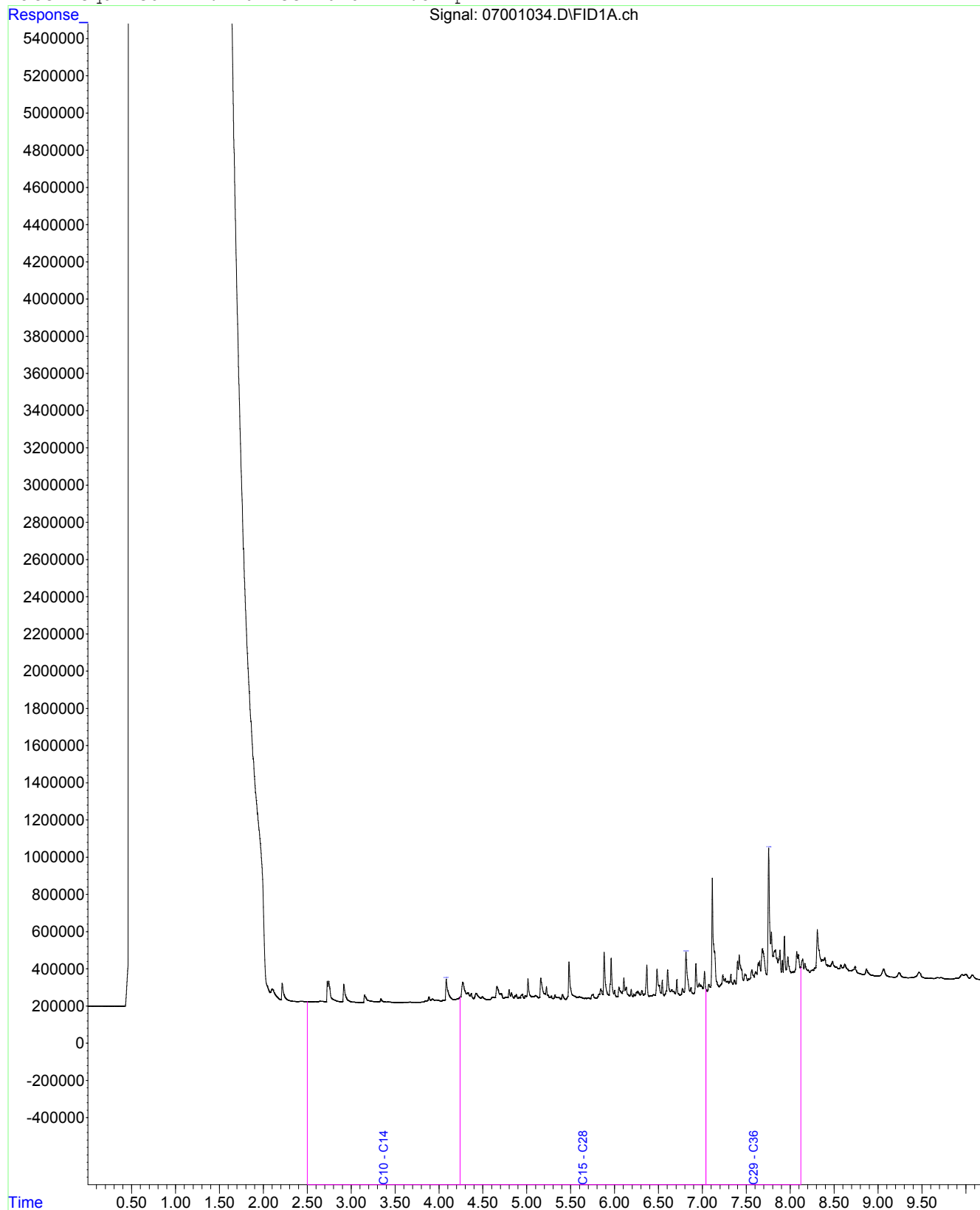
Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - 448.3 Water VIC EPA IWRG621 - Water Equivalent Suite	WATER - W-18 TRH(C6 - C9)/BTEXN
EM1819646-019	05-Dec-2018 00:00	CPT_QC302_051218	✓	
EM1819646-020	05-Dec-2018 00:00	CPT_QC402_051218		✓
EM1819646-021	05-Dec-2018 00:00	CPT_QC504_051218		✓
EM1819646-022	05-Dec-2018 00:00	CPT_QC505_051218		✓

References

Fraction Scheme : NEPM Draft HIL
Data File : 07001034.D
Laboratory Number: EM1819646-001
Sample ID : CPT_MW02_051218_0.2
Date Acquired : 10 Dec 2018 7:32 pm



Fraction Scheme : Standard
Data File : 07001034.D
Laboratory Number: EM1819646-001
Sample ID : CPT_MW02_051218_0.2
Date Acquired : 10 Dec 2018 7:32 pm



Analysis received 10/12/18 @ 11.40 am - BN

AECOM

Q4AN(EV)-007-FM1

ANZ
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: S. MacLachlan		Destination Laboratory	
PROJECT MANAGER (PM):		SITE: GUPP Groundwater Study		MOBILE:		ALS	
PROJECT NUMBER & TASK CO 60582811		P.O. NO.:		EMAIL REPORT TO:			
RESULTS REQUIRED (Date):		QUOTE NO. 61096118		ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:					
COOLER SEAL (circle appropriate):							
Initialed: Yes No N/A							
SAMPLE TEMPERATURE							
CHILLED: Yes No							
SAMPLE INFORMATION (note: S = Soil, W = Water)		CONTAINER INFORMATION					
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
1	CPT-MW22-061218-0.2	S				15	
2	CPT-MW22-061218-0.5						
3	CPT-MW22-061218-1.0						
4	CPT-MW22-061218-2.0						
5	CPT-MW22-061218-3.0						
6	CPT-MW22-061218-4.0						
7	CPT-MW01-061218-0.2			1330	BP 11/12 1x jar 151B		
8	CPT-MW01-061218-0.5			1335			
9	CPT-MW01-061218-1.0			1340			
10	CPT-MW01-061218-2.0			1345			
11	CPT-MW01-061218-3.0			1350			
12	CPT-MW01-061218-4.0			1355			
13	CPT-AL0303-061218	W			8.6		
14	CPT-AL03-061218	W			20		
15	CPT-AL0506-061218	W			20		
16	CPT-AL0507-061218	W			20		
RELINQUISHED BY: Sebastian MacLachlan		RECEIVED BY: Alice		Name: Alice		METHOD OF SHIPMENT	
Date: 06.12.18		Date: 6/12/18		Date: 6/12/18		Con' Note No:	
Time: 1630		Time: 1630		Time: 1630		Transport Co:	
Name: AECOM		Name: AECOM		Name: AECOM		Transport Co:	
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide/Cd Preserved; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic		Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide/Cd Preserved; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic		Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide/Cd Preserved; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic		Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide/Cd Preserved; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic	
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved; Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic;		V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved; Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic;		V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved; Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic;		V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved; Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic;	
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.		F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.		F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.		F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.	

Please freeze for Acid sulfate soils.

COC Page of

Environmental Division
Melbourne
Work Order Reference
EM1819706



Telephone : + 61-3-8549 9800

From: [REDACTED]@aecom.com>
Sent: Monday, 10 December 2018 11:40 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: On Hold - EM1819706 - AECOMAU (60582811)

Hi [REDACTED]

Please analyse:

1. CPT_MW01_061218_0.2 = IWRG621 - (7)
2. CPT_MW01_061218_0.5 = IWRG621 - (8)
3. CPT_MW22_061218_0.2 = IWRG621 - (1)
4. CPT_MW22_061218_0.5 = IWRG621 - (2)
5. QC303_061218 = IWRG621 water equivalent - (13)
6. QC403_061218 = TPH(C6-C9)/BTEXN - (14)
7. QC506_061218 = TPH(C6-C9)/BTEXN - (15)
8. QC507_061218 = TPH(C6-C9)/BTEXN - (16)

At standard TAT. Thanks.

Regards,

Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

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From: [REDACTED]@alsglobal.com]
Sent: Monday, 10 December 2018 7:18 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: On Hold - EM1819706 - AECOMAU (60582811)

Hi [REDACTED]

Please refer to attached samples on hold

Thanks

Regards

[REDACTED]
Client Services – Springvale
Environmental

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1819706**

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [REDACTED]	E-mail	: [REDACTED]@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60582811	Page	: 1 of 3
Order number	: ----	Quote number	: EP2016AECOMAU0014 (EN/096/18)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: GIJPP Groundwater Study		
Sampler	: SM		

Dates

Date Samples Received	: 06-Dec-2018 18:30	Issue Date	: 11-Dec-2018
Client Requested Due Date	: 17-Dec-2018	Scheduled Reporting Date	: 17-Dec-2018

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 0.9°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 16 / 8

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- ### Summary of Sample(s) and Requested Analysis

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold)	No analysis	SOIL - E	Moisture	SOIL - F	FWRG 6
EM1819706-001	06-Dec-2018 00:00	CPT_MW22_061218_0.2			✓		✓	
EM1819706-002	06-Dec-2018 00:00	CPT_MW22_061218_0.5			✓		✓	
EM1819706-003	06-Dec-2018 00:00	CPT_MW22_061218_1.0	✓					
EM1819706-004	06-Dec-2018 00:00	CPT_MW22_061218_2.0	✓					
EM1819706-005	06-Dec-2018 00:00	CPT_MW22_061218_3.0	✓					
EM1819706-006	06-Dec-2018 00:00	CPT_MW22_061218_4.0	✓					
EM1819706-007	06-Dec-2018 13:30	CPT_MW01_061218_0.2			✓		✓	
EM1819706-008	06-Dec-2018 13:35	CPT_MW01_061218_0.5			✓		✓	
EM1819706-009	06-Dec-2018 13:40	CPT_MW01_061218_1.0	✓					
EM1819706-010	06-Dec-2018 13:45	CPT_MW01_061218_2.0	✓					
EM1819706-011	06-Dec-2018 13:50	CPT_MW01_061218_3.0	✓					
EM1819706-012	06-Dec-2018 13:55	CPT_MW01_061218_4.0	✓					

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER VIC EPA	WATER TRHCG
EM1819706-013	06-Dec-2018 00:00	CPT_QC303_061218	✓	
EM1819706-014	06-Dec-2018 00:00	CPT_QC403_061218		✓
EM1819706-015	06-Dec-2018 00:00	CPT_QC506_061218		✓
EM1819706-016	06-Dec-2018 00:00	CPT_QC507_061218		✓

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EA005-P: pH by PC Titrator							



CPT_QC303_061218	Clear Plastic Bottle - Natural	----	06-Dec-2018	06-Dec-2018	✓	10-Dec-2018	✗
------------------	--------------------------------	------	-------------	-------------	---	-------------	---

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email

AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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- *AU Certificate of Analysis - NATA (COA)
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- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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@aecom.com

CERTIFICATE OF ANALYSIS

Work Order : **EM1819706**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60582811
Order number : 60582811
C-O-C number : ----
Sampler : SM
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 16
No. of samples analysed : 7

Page : 1 of 14
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 06-Dec-2018 18:30
Date Analysis Commenced : 11-Dec-2018
Issue Date : 17-Dec-2018 16:38



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
[REDACTED]	Non-metals prep supervisor	Melbourne Inorganics, Springvale, VIC
[REDACTED]	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
[REDACTED]	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW22_061218_0.2	CPT_MW22_061218_0.5	CPT_MW01_061218_0.2	CPT_MW01_061218_0.5	----
Client sampling date / time					06-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 13:30	06-Dec-2018 13:35	----
Compound	CAS Number	LOR	Unit	EM1819706-001	EM1819706-002	EM1819706-007	EM1819706-008	-----	
				Result	Result	Result	Result	----	
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit	5.4	5.1	4.6	5.9	----	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	22.3	17.6	13.2	29.4	----	
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	10	----	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----	
Copper	7440-50-8	5	mg/kg	7	<5	<5	<5	----	
Lead	7439-92-1	5	mg/kg	15	8	8	8	----	
Molybdenum	7439-98-7	2	mg/kg	<2	<2	2	<2	----	
Nickel	7440-02-0	2	mg/kg	6	3	4	10	----	
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	----	
Silver	7440-22-4	2	mg/kg	<2	<2	<2	<2	----	
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	----	
Zinc	7440-66-6	5	mg/kg	21	<5	<5	<5	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----	
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----	
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg	1	<1	<1	<1	----	
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg	60	80	70	270	----	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----	
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----	
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----	
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----	
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----	
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----	
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----	
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----	



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW22_061218_0.2	CPT_MW22_061218_0.5	CPT_MW01_061218_0.2	CPT_MW01_061218_0.5	----
Client sampling date / time					06-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 13:30	06-Dec-2018 13:35	----
Compound	CAS Number	LOR	Unit		EM1819706-001	EM1819706-002	EM1819706-007	EM1819706-008	-----
					Result	Result	Result	Result	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	----
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,1-Dichloroethene	75-35-4	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
Methylene chloride	75-09-2	0.4	mg/kg		<0.4	<0.4	<0.4	<0.4	----
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
Chloroform	67-66-3	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
1,2-Dichloroethane	107-06-2	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
Trichloroethene	79-01-6	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg		<0.04	<0.04	<0.04	<0.04	----
Tetrachloroethene	127-18-4	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
Chlorobenzene	108-90-7	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,4-Dichlorobenzene	106-46-7	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,2-Dichlorobenzene	95-50-1	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
2,4-Dichlorophenol	120-83-2	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
2,6-Dichlorophenol	87-65-0	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW22_061218_0.2	CPT_MW22_061218_0.5	CPT_MW01_061218_0.2	CPT_MW01_061218_0.5	----
Client sampling date / time					06-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 13:30	06-Dec-2018 13:35	----
Compound	CAS Number	LOR	Unit		EM1819706-001	EM1819706-002	EM1819706-007	EM1819706-008	-----
				Result	Result	Result	Result	Result	----
EP075A: Phenolic Compounds (Halogenated) - Continued									
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Pentachlorophenol	87-86-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		<1	<1	<1	<1	----
2-Methylphenol	95-48-7	1	mg/kg		<1	<1	<1	<1	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	----
2-Nitrophenol	88-75-5	1	mg/kg		<1	<1	<1	<1	----
2,4-Dimethylphenol	105-67-9	1	mg/kg		<1	<1	<1	<1	----
2,4-Dinitrophenol	51-28-5	5	mg/kg		<5	<5	<5	<5	----
4-Nitrophenol	100-02-7	5	mg/kg		<5	<5	<5	<5	----
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg		<5	<5	<5	<5	----
Dinoseb	88-85-7	5	mg/kg		<5	<5	<5	<5	----
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg		<5	<5	<5	<5	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		<1	<1	<1	<1	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW22_061218_ 0.2	CPT_MW22_061218_ 0.5	CPT_MW01_061218_ 0.2	CPT_MW01_061218_ 0.5	----
Client sampling date / time					06-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 13:30	06-Dec-2018 13:35	----
Compound	CAS Number	LOR	Unit		EM1819706-001	EM1819706-002	EM1819706-007	EM1819706-008	-----
				Result	Result	Result	Result	Result	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
beta-BHC	319-85-7	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
gamma-BHC	58-89-9	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
delta-BHC	319-86-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Heptachlor	76-44-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Aldrin	309-00-2	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
cis-Chlordane	5103-71-9	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
trans-Chlordane	5103-74-2	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Endosulfan 1	959-98-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Dieldrin	60-57-1	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Endrin aldehyde	7421-93-4	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Endrin	72-20-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Endosulfan 2	33213-65-9	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
4,4'-DDT	50-29-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Methoxychlor	72-43-5	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
^ Sum of organochlorine pesticides	----	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
^ Chlordane	57-74-9	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW22_061218_0.2	CPT_MW22_061218_0.5	CPT_MW01_061218_0.2	CPT_MW01_061218_0.5	----
Client sampling date / time					06-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 13:30	06-Dec-2018 13:35	----
Compound	CAS Number	LOR	Unit		EM1819706-001	EM1819706-002	EM1819706-007	EM1819706-008	-----
				Result	Result	Result	Result	Result	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		110	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		110	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		140	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		140	<50	<50	<50	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		107	104	61.0	96.2	----
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		80.4	82.8	83.1	74.7	----
Toluene-D8	2037-26-5	0.1	%		76.3	77.2	77.8	70.1	----
4-Bromofluorobenzene	460-00-4	0.1	%		82.4	83.6	85.4	78.4	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		118	114	82.9	114	----
2-Chlorophenol-D4	93951-73-6	0.025	%		93.0	89.0	62.6	87.1	----
2,4,6-Tribromophenol	118-79-6	0.025	%		80.5	72.3	47.6	53.6	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		118	112	78.8	111	----
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%		109	100.0	71.3	97.9	----
2-Fluorobiphenyl	321-60-8	0.025	%		118	111	76.0	102	----
Anthracene-d10	1719-06-8	0.025	%		120	114	79.3	103	----
4-Terphenyl-d14	1718-51-0	0.025	%		107	100	69.6	90.8	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC303_061218	CPT_QC403_061218	CPT_QC506_061218	----	----
Client sampling date / time					06-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1819706-013	EM1819706-014	EM1819706-015	-----	-----
					Result	Result	Result	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		8.37	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Silver	7440-22-4	0.001	mg/L		<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG050F: Dissolved Hexavalent Chromium									
Hexavalent Chromium	18540-29-9	0.01	mg/L		<0.01	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	0.004	mg/L		<0.004	----	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
^ Total Polychlorinated biphenyls	----	1	µg/L		<1	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	5	µg/L		<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Vinyl chloride	75-01-4	50	µg/L		<50	----	----	----	----
1,1-Dichloroethene	75-35-4	5	µg/L		<5	----	----	----	----
Methylene chloride	75-09-2	5	µg/L		<5	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	5	µg/L		<5	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	5	µg/L		<5	----	----	----	----
1,1,1-Trichloroethane	71-55-6	5	µg/L		<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	----	----	----	----
1,2-Dichloroethane	107-06-2	5	µg/L		<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC303_061218	CPT_QC403_061218	CPT_QC506_061218	----	----
Client sampling date / time					06-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1819706-013	EM1819706-014	EM1819706-015	-----	-----
				Result	Result	Result		----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1,1,2-Trichloroethane	79-00-5	5	µg/L	<5		----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5		----	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5		----	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5		----	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L	<5		----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L	<5		----	----	----	----
1,4-Dichlorobenzene	106-46-7	5	µg/L	<5		----	----	----	----
1,2-Dichlorobenzene	95-50-1	5	µg/L	<5		----	----	----	----
1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5		----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L	<5		----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L	<1.0		----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0		----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0		----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0		----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0		----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0		----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0		----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0		----	----	----	----
Benzo(a)anthracene	56-55-3	1.0	µg/L	<1.0		----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0		----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0		----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0		----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5		----	----	----	----
Indeno(1,2,3.cd)pyrene	193-39-5	1.0	µg/L	<1.0		----	----	----	----
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0		----	----	----	----
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0		----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5		----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5		----	----	----	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	2	µg/L	<2		----	----	----	----
2,4-Dichlorophenol	120-83-2	2	µg/L	<2		----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC303_061218	CPT_QC403_061218	CPT_QC506_061218	----	----
Client sampling date / time					06-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1819706-013	EM1819706-014	EM1819706-015	-----	-----
					Result	Result	Result	----	----
EP075A: Phenolic Compounds (Halogenated) - Continued									
2,6-Dichlorophenol	87-65-0	2	µg/L		<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	4	µg/L		<4	----	----	----	----
2,4,5-Trichlorophenol	95-95-4	2	µg/L		<2	----	----	----	----
2,4,6-Trichlorophenol	88-06-2	2	µg/L		<2	----	----	----	----
2,3,5,6-Tetrachlorophenol	935-95-5	2	µg/L		<2	----	----	----	----
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	2	µg/L		<2	----	----	----	----
Pentachlorophenol	87-86-5	2	µg/L		<2	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	4	µg/L		<4	----	----	----	----
2-Methylphenol	95-48-7	4	µg/L		<4	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L		<4	----	----	----	----
2-Nitrophenol	88-75-5	4	µg/L		<4	----	----	----	----
2,4-Dimethylphenol	105-67-9	4	µg/L		<4	----	----	----	----
2,4-Dinitrophenol	51-28-5	100	µg/L		<100	----	----	----	----
4-Nitrophenol	100-02-7	50	µg/L		<50	----	----	----	----
2-Methyl-4,6-dinitrophenol	8071-51-0	50	µg/L		<50	----	----	----	----
Dinoseb	88-85-7	50	µg/L		<50	----	----	----	----
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	50	µg/L		<50	----	----	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDT	50-29-3	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC303_061218	CPT_QC403_061218	CPT_QC506_061218	----	----
Client sampling date / time					06-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1819706-013	EM1819706-014	EM1819706-015	-----	-----
					Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		106	----	----	----	----
EP074S: VOC Surrogates									
1,2-Dichloroethane-D4	17060-07-0	5	%		97.6	----	----	----	----
Toluene-D8	2037-26-5	5	%		95.4	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		98.2	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		29.8	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		69.4	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%		72.0	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		85.3	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		87.4	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		83.7	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC303_061218	CPT_QC403_061218	CPT_QC506_061218	----	----
Client sampling date / time					06-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1819706-013	EM1819706-014	EM1819706-015	-----	-----
					Result	Result	Result	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.25	%		44.1	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.25	%		91.3	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.25	%		79.6	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.25	%		112	----	----	----	----
1,2-Dichlorobenzene-D4	2199-69-1	0.25	%		103	----	----	----	----
2-Fluorobiphenyl	321-60-8	0.25	%		108	----	----	----	----
Anthracene-d10	1719-06-8	0.25	%		109	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.25	%		92.0	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		98.6	98.5	106	----	----
Toluene-D8	2037-26-5	2	%		92.2	89.1	100	----	----
4-Bromofluorobenzene	460-00-4	2	%		110	102	113	----	----



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Sub-Matrix: SOIL		□□□□ □ □□ □ s □	
<i>Compound</i>	<i>CAS Number</i>	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1,2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	28	134
2-Chlorophenol-D4	93951-73-6	27	123
2,4,6-Tribromophenol	118-79-6	25	149
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	29	125
1,2-Dichlorobenzene-D4	2199-69-1	31	117
2-Fluorobiphenyl	321-60-8	44	136
Anthracene-d10	1719-06-8	53	133
4-Terphenyl-d14	1718-51-0	59	141

Sub-Matrix: WATER		□□□□ □ □□ □ s □	
<i>Compound</i>	<i>CAS Number</i>	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	125
EP074S: VOC Surrogates			
1,2-Dichloroethane-D4	17060-07-0	72	132
Toluene-D8	2037-26-5	77	132
4-Bromofluorobenzene	460-00-4	67	131
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	13	90
2-Chlorophenol-D4	93951-73-6	42	117
2,4,6-Tribromophenol	118-79-6	52	140
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	49	136

Sub-Matrix: WATER		☐☐☐☐ ☐ ☐☐☐ ☐☐ s ☐	
Compound	CAS Number	☐☐%	☐☐☐
EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued			
1,2-Dichlorobenzene-D4	2199-69-1	49	128
2-Fluorobiphenyl	321-60-8	57	137
Anthracene-d10	1719-06-8	67	137
4-Terphenyl-d14	1718-51-0	66	136
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

Work Order	: EM1819706	Page	: 1 of 8
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]		
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [REDACTED]	E-mail	: peter.ravlic@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60582811	Date Received	: 06-Dec-2018 18:30
Order number	: 60582811	Date Analysed	: 11-Dec-2018
C-O-C number	: ----	Date Issued	: 17-Dec-2018 16:39
No. of samples received	: 16		
No. of samples analysed	: 7	Quote number	: EN/096/18

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Client sample ID

Sub-Matrix: SOIL				Client sample ID		Sampling date/time	CPT_MW22_0 61218_0.2	CPT_MW22_0 61218_0.5	CPT_MW01_0 61218_0.2	CPT_MW01_0 61218_0.5	----
				Sampling date/time							
Compound	Method	LOR	Unit	□□□□ □□	□□□□ □□	□□ □□ □□ □□	□□□□ □□ □□	□□□□ □□ □□	□□□□ □□ □□	□□ □□ □□ □□	□□ □□ □□ □□
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	2	12.5	5.4	5.1	4.6	5.9	----	
EG005T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	2000	<5	<5	<5	10	----	
Cadmium	EG005T	1	mg/kg	----	400	<1	<1	<1	<1	----	
Copper	EG005T	5	mg/kg	----	20000	7	<5	<5	<5	----	
Lead	EG005T	5	mg/kg	----	6000	15	8	8	8	----	
Molybdenum	EG005T	2	mg/kg	----	4000	<2	<2	2	<2	----	
Nickel	EG005T	2	mg/kg	----	12000	6	3	4	10	----	
Selenium	EG005T	5	mg/kg	----	200	<5	<5	<5	<5	----	
Silver	EG005T	2	mg/kg	----	720	<2	<2	<2	<2	----	
Zinc	EG005T	5	mg/kg	----	140000	21	<5	<5	<5	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	300	<0.1	<0.1	<0.1	<0.1	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<0.5	<0.5	<0.5	<0.5	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	10000	1	<1	<1	<1	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	40000	60	80	70	270	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	16	<0.2	<0.2	<0.2	<0.2	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	240	<0.2	<0.2	<0.2	<0.2	----	
EP074I: Volatile Halogenated Compounds											
Vinyl chloride	EP074-UT	0.02	mg/kg	----	4.8	<0.02	<0.02	<0.02	<0.02	----	
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	11	<0.02	<0.02	<0.02	<0.02	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	50	<0.01	<0.01	<0.01	<0.01	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	320	<0.03	<0.03	<0.03	<0.03	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	2200	<1	<1	<1	<1	----	
EP075B: Polynuclear Aromatic Hydrocarbons											



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

				Client sample ID			CPT_MW22_0 61218_0.2	CPT_MW22_0 61218_0.5	CPT_MW01_0 61218_0.2	CPT_MW01_0 61218_0.5	----
				Sampling date/time	□ □ □ □ □ □	□ □ □ □ □ □	06-Dec-2018 15:00	06-Dec-2018 15:00	06-Dec-2018 13:30	06-Dec-2018 13:35	----
Compound	Method	LOR	Unit		□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □	EM1819706-001	EM1819706-002	EM1819706-007	EM1819706-008	-----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----		20	<0.5	<0.5	<0.5	<0.5	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----		400	<0.5	<0.5	<0.5	<0.5	----
EP075I: Organochlorine Pesticides											
Heptachlor	EP075-EM	0.03	mg/kg	----		4.8	<0.03	<0.03	<0.03	<0.03	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----		4.8	<0.03	<0.03	<0.03	<0.03	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----		50	<0.05	<0.05	<0.05	<0.05	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----		16	<0.03	<0.03	<0.03	<0.03	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----		50	<0.03	<0.03	<0.03	<0.03	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----		2600	<10	<10	<10	<10	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----		40000	110	<50	<50	<50	----

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

Sub-Matrix: SOIL				Client sample ID		□□□□ □□	□□□□ □□	CPT_MW22_0	CPT_MW22_0	CPT_MW01_0	CPT_MW01_0	----
				Sampling date/time				61218_0.2	61218_0.5	61218_0.2	61218_0.5	
								06-Dec-2018 15:00	06-Dec-2018 15:00	06-Dec-2018 13:30	06-Dec-2018 13:35	
Compound	Method	LOR	Unit	□□ □□ □□ □	□□□□ □□ □	EM1819706-001	EM1819706-002	EM1819706-007	EM1819706-008	-----		
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	4	9	5.4	5.1	4.6	5.9	----		
EG005T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	500	<5	<5	<5	10	----		
Cadmium	EG005T	1	mg/kg	----	100	<1	<1	<1	<1	----		
Copper	EG005T	5	mg/kg	----	5000	7	<5	<5	<5	----		
Lead	EG005T	5	mg/kg	----	1500	15	8	8	8	----		
Molybdenum	EG005T	2	mg/kg	----	1000	<2	<2	2	<2	----		
Nickel	EG005T	2	mg/kg	----	3000	6	3	4	10	----		
Selenium	EG005T	5	mg/kg	----	50	<5	<5	<5	<5	----		
Silver	EG005T	2	mg/kg	----	180	<2	<2	<2	<2	----		
Tin	EG005T	5	mg/kg	----	500	<5	<5	<5	<5	----		
Zinc	EG005T	5	mg/kg	----	35000	21	<5	<5	<5	----		
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	75	<0.1	<0.1	<0.1	<0.1	----		
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	<0.5	<0.5	<0.5	----		
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	2500	1	<1	<1	<1	----		
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	10000	60	80	70	270	----		
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	4	<0.2	<0.2	<0.2	<0.2	----		
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	70	<0.2	<0.2	<0.2	<0.2	----		
EP074I: Volatile Halogenated Compounds												
Vinyl chloride	EP074-UT	0.02	mg/kg	----	1.2	<0.02	<0.02	<0.02	<0.02	----		
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	2.8	<0.02	<0.02	<0.02	<0.02	----		
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	10	<0.01	<0.01	<0.01	<0.01	----		
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	<0.03	<0.03	<0.03	----		
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	560	<1	<1	<1	<1	----		
EP075B: Polynuclear Aromatic Hydrocarbons												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

				Client sample ID			CPT_MW22_0 61218_0.2	CPT_MW22_0 61218_0.5	CPT_MW01_0 61218_0.2	CPT_MW01_0 61218_0.5	----
				Sampling date/time	□ □ □ □ □ □	□ □ □ □ □ □	06-Dec-2018 15:00	06-Dec-2018 15:00	06-Dec-2018 13:30	06-Dec-2018 13:35	----
Compound	Method	LOR	Unit		□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □	EM1819706-001	EM1819706-002	EM1819706-007	EM1819706-008	-----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----		5	<0.5	<0.5	<0.5	<0.5	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----		100	<0.5	<0.5	<0.5	<0.5	----
EP075I: Organochlorine Pesticides											
Heptachlor	EP075-EM	0.03	mg/kg	----		1.2	<0.03	<0.03	<0.03	<0.03	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----		1.2	<0.03	<0.03	<0.03	<0.03	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----		50	<0.05	<0.05	<0.05	<0.05	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----		4	<0.03	<0.03	<0.03	<0.03	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----		10	<0.03	<0.03	<0.03	<0.03	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----		650	<10	<10	<10	<10	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----		10000	110	<50	<50	<50	----

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

Sub-Matrix: SOIL				Client sample ID		CPT_MW22_0 61218_0.2	CPT_MW22_0 61218_0.5	CPT_MW01_0 61218_0.2	CPT_MW01_0 61218_0.5	----		
				Sampling date/time							□□□□ □□	□□□□ □□
				□□ □□ □□ □	□□□□ □□ □							
Compound	Method	LOR	Unit									
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	4	9	5.4	5.1	4.6	5.9	----		
EG005T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	20	<5	<5	<5	10	----		
Cadmium	EG005T	1	mg/kg	----	3	<1	<1	<1	<1	----		
Copper	EG005T	5	mg/kg	----	100	7	<5	<5	<5	----		
Lead	EG005T	5	mg/kg	----	300	15	8	8	8	----		
Molybdenum	EG005T	2	mg/kg	----	40	<2	<2	2	<2	----		
Nickel	EG005T	2	mg/kg	----	60	6	3	4	10	----		
Selenium	EG005T	5	mg/kg	----	10	<5	<5	<5	<5	----		
Silver	EG005T	2	mg/kg	----	10	<2	<2	<2	<2	----		
Tin	EG005T	5	mg/kg	----	50	<5	<5	<5	<5	----		
Zinc	EG005T	5	mg/kg	----	200	21	<5	<5	<5	----		
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	1	<0.1	<0.1	<0.1	<0.1	----		
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1	<0.5	<0.5	<0.5	<0.5	----		
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	50	1	<1	<1	<1	----		
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	450	60	80	70	270	----		
EP066: Polychlorinated Biphenyls (PCB)												
Total Polychlorinated biphenyls	EP066-EM	0.1	mg/kg	----	2	<0.1	<0.1	<0.1	<0.1	----		
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	1	<0.2	<0.2	<0.2	<0.2	----		
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	7	<0.2	<0.2	<0.2	<0.2	----		
EP074I: Volatile Halogenated Compounds												
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	1	<0.01	<0.01	<0.01	<0.01	----		
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	<0.03	<0.03	<0.03	----		
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	60	<1	<1	<1	<1	----		
EP075B: Polynuclear Aromatic Hydrocarbons												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL				Client sample ID			CPT_MW22_0 61218_0.2	CPT_MW22_0 61218_0.5	CPT_MW01_0 61218_0.2	CPT_MW01_0 61218_0.5	----
Sampling date/time							06-Dec-2018 15:00	06-Dec-2018 15:00	06-Dec-2018 13:30	06-Dec-2018 13:35	----
Compound	Method	LOR	Unit				EM1819706-001	EM1819706-002	EM1819706-007	EM1819706-008	-----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	1	<0.5	<0.5	<0.5	<0.5	<0.5	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	20	<0.5	<0.5	<0.5	<0.5	<0.5	----
EP075I: Organochlorine Pesticides											
Sum of organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	<0.03	<0.03	<0.03	<0.03	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	100	<10	<10	<10	<10	<10	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	1000	110	<50	<50	<50	<50	----

QUALITY CONTROL REPORT

Work Order	: EM1819706	Page	: 1 of 17
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60582811	Date Samples Received	: 06-Dec-2018
Order number	: 60582811	Date Analysis Commenced	: 11-Dec-2018
C-O-C number	: ----	Issue Date	: 17-Dec-2018
Sampler	: SM		
Site	: GIJPP Groundwater Study		
Quote number	: EN/096/18		
No. of samples received	: 16		
No. of samples analysed	: 7		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED SIGNATURE]

Non-metals prep supervisor
Senior Inorganic Chemist
2IC Organic Chemist
2IC Organic Chemist
Senior Inorganic Instrument Chemist
Senior Organic Chemist

Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2089297)									
EM1819706-001	CPT_MW22_061218_0.2	EA001: pH (CaCl ₂)	----	0.1	pH Unit	5.4	5.4	0.00	0% - 20%
EM1819825-004	Anonymous	EA001: pH (CaCl ₂)	----	0.1	pH Unit	8.4	8.4	0.00	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2090868)									
EM1819706-001	CPT_MW22_061218_0.2	EA055: Moisture Content	----	0.1	%	22.3	22.0	1.48	0% - 20%
EM1819739-007	Anonymous	EA055: Moisture Content	----	0.1	%	17.5	16.9	3.44	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 2090548)									
EM1819706-001	CPT_MW22_061218_0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	6	5	0.00	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	7	5	29.6	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	15	12	22.0	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	21	14	41.8	No Limit
EM1819752-011	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	45	46	2.65	0% - 20%
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	7	14.1	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	25	25	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	18	18	0.00	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QC Lot: 2090548) - continued									
EM1819752-011	Anonymous	EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	94	97	2.96	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2090545)									
EM1819706-001	CPT_MW22_061218_0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1819752-011	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2092284)									
EM1819706-001	CPT_MW22_061218_0.2	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1819752-014	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2093143)									
EM1819706-001	CPT_MW22_061218_0.2	EK026SF: Total Cyanide	57-12-5	1	mg/kg	1	1	0.00	No Limit
EM1819752-014	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.00	No Limit
EK040T: Fluoride Total (QC Lot: 2089902)									
EM1819706-001	CPT_MW22_061218_0.2	EK040T: Fluoride	16984-48-8	40	mg/kg	60	70	0.00	No Limit
EM1819950-003	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	90	140	40.7	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2090772)									
EM1819706-001	CPT_MW22_061218_0.2	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2087295)									
EM1819706-001	CPT_MW22_061218_0.2	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2087295)									
EM1819706-001	CPT_MW22_061218_0.2	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP074I: Volatile Halogenated Compounds (QC Lot: 2087295)									
EM1819706-001	CPT_MW22_061218_0.2	EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074I: Volatile Halogenated Compounds (QC Lot: 2087295) - continued									
EM1819706-001	CPT_MW22_061218_0.2	EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.00	No Limit
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.00	No Limit
EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2090770)									
EM1819706-001	CPT_MW22_061218_0.2	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2090770)									
EM1819706-001	CPT_MW22_061218_0.2	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.00	No Limit
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2090770)									
EM1819706-001	CPT_MW22_061218_0.2	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2090770) - continued									
EM1819706-001	CPT_MW22_061218_0.2	EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075I: Organochlorine Pesticides (QC Lot: 2090770)									
EM1819706-001	CPT_MW22_061218_0.2	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4,4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2087295)									
EM1819706-001	CPT_MW22_061218_0.2	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2090771)									
EM1819706-001	CPT_MW22_061218_0.2	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	110	<100	12.8	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2087295)									
EM1819706-001	CPT_MW22_061218_0.2	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2090771)									
EM1819706-001	CPT_MW22_061218_0.2	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	140	<100	30.2	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2090771) - continued									
EM1819706-001	CPT_MW22_061218_0.2	EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA005P: pH by PC Titrator (QC Lot: 2093421)									
EM1819752-007	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.49	7.22	3.67	0% - 20%
EM1819796-007	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	9.48	9.47	0.106	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2095057)									
EM1819706-013	CPT_QC303_061218	EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2095059)									
EM1819856-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.009	0.007	14.4	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.012	0.009	33.6	0% - 50%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.131	0.121	8.03	0% - 20%
		EG020A-F: Tin	7440-31-5	0.001	mg/L	0.002	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.008	0.008	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1819706-013	CPT_QC303_061218	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 2095058)									
EM1819856-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1819706-013	CPT_QC303_061218	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 2088241)									
EM1819246-007	Anonymous	EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2087349)									
EM1819706-013	CPT_QC303_061218	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	0.00	No Limit
EM1819800-001	Anonymous	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	0.00	No Limit
EK040P: Fluoride by PC Titrator (QC Lot: 2093420)									
EM1819667-003	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	1.4	1.5	0.00	0% - 50%
EM1819752-007	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2088972)									
EM1819706-013	CPT_QC303_061218	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2088972)									
EM1819706-013	CPT_QC303_061218	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Methylene chloride	75-09-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2088972)									
EM1819706-013	CPT_QC303_061218	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2088972)									
EM1819706-013	CPT_QC303_061218	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2088973)									
EM1819947-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1819706-013	CPT_QC303_061218	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2088973)									
EM1819947-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1819706-013	CPT_QC303_061218	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2088973)									
EM1819947-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1819706-013	CPT_QC303_061218	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit

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Work Order : EM1819706
Client : AECOM Australia Pty Ltd
Project : 60582811



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 2088973) - continued									
EM1819706-013	CPT_QC303_061218	EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
		106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005T: Total Metals by ICP-AES (QCLot: 2090548)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	98.1	78	107
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	93.6	76	108
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	88.3	78	108
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	83.4	78	106
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	103	78	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	94.5	80	109
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	108	92	110
EG005T: Silver	7440-22-4	2	mg/kg	<2	2.1 mg/kg	83.9	80	108
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.2 mg/kg	105	78	117
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	94.0	79	110
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2090545)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	88.3	77	104
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2092284)								
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	84.9	75	112
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2093143)								
EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	20 mg/kg	102	80	107
EK040T: Fluoride Total (QCLot: 2089902)								
EK040T: Fluoride	16984-48-8	40	mg/kg	<40	400 mg/kg	94.5	75	110
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2090772)								
EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	118	63	118
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2087295)								
EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	2.1 mg/kg	91.4	68	117
EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	2.1 mg/kg	91.1	67	118
EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.1 mg/kg	90.3	66	119
EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	4.2 mg/kg	88.5	66	115
	106-42-3							
EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	2.1 mg/kg	91.6	71	115
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2.1 mg/kg	89.9	68	113
EP074H: Naphthalene (QCLot: 2087295)								
EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	0.6 mg/kg	98.8	75	113
EP074I: Volatile Halogenated Compounds (QCLot: 2087295)								
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	88.5	51	136
EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	87.2	56	125



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP074I: Volatile Halogenated Compounds (QCLot: 2087295) - continued								
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	93.4	70	117
EP074-UT: trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	90.6	61	122
EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	93.8	70	114
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	92.7	69	112
EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	91.4	62	124
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	89.6	56	126
EP074-UT: 1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	97.9	73	118
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	89.6	66	117
EP074-UT: 1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	99.0	76	115
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	86.5	62	120
EP074-UT: 1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	0.1 mg/kg	94.6	71	118
EP074-UT: 1,1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	98.1	69	119
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	85.5	47	125
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	93.2	73	114
EP074-UT: 1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	90.9	66	114
EP074-UT: 1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	92.0	73	110
EP074-UT: 1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	88.4	54	121
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2090770)								
EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	2 mg/kg	109	69	123
EP075-EM: 2,4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	2 mg/kg	116	55	128
EP075-EM: 2,6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	2 mg/kg	119	70	123
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	2 mg/kg	115	56	128
EP075-EM: 2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	2 mg/kg	125	66	126
EP075-EM: 2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	2 mg/kg	125	60	126
EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	4 mg/kg	112	65	124
EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/5 8-90-2	0.05	mg/kg	<0.05	8 mg/kg	87.2	64	128
EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	4 mg/kg	108	43	127
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2090770)								
EP075-EM: Phenol	108-95-2	1	mg/kg	<1	2 mg/kg	106	58	126
EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	2 mg/kg	115	65	126
EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	4 mg/kg	111	64	123
EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	2 mg/kg	116	53	128
EP075-EM: 2,4-Dimethylphenol	105-67-9	1	mg/kg	<1	2 mg/kg	111	56	136
EP075-EM: 2,4-Dinitrophenol	51-28-5	5	mg/kg	<5	12 mg/kg	100.0	41	156
EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	12 mg/kg	97.6	48	130
EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<5	12 mg/kg	84.9	47	125
EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	12 mg/kg	80.1	51	123
EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<5	10 mg/kg	68.8	36	137



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2090770)								
EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	2 mg/kg	123	70	123
EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	2 mg/kg	123	70	130
EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	2 mg/kg	# 132	68	131
EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	2 mg/kg	122	72	128
EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	2 mg/kg	125	75	128
EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	2 mg/kg	127	55	127
EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	2 mg/kg	115	75	128
EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	2 mg/kg	117	73	130
EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	2 mg/kg	115	72	131
EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	2 mg/kg	117	77	133
EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	4 mg/kg	119	76	133
EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	2 mg/kg	116	70	130
EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	2 mg/kg	114	72	134
EP075-EM: Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	2 mg/kg	114	72	135
EP075-EM: Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	2 mg/kg	114	71	134
EP075I: Organochlorine Pesticides (QCLot: 2090770)								
EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	2 mg/kg	108	71	122
EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	2 mg/kg	95.3	70	126
EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	2 mg/kg	116	70	130
EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	2 mg/kg	106	71	129
EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	2 mg/kg	123	74	128
EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	2 mg/kg	104	72	126
EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	2 mg/kg	108	72	127
EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	2 mg/kg	94.7	73	129
EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	2 mg/kg	87.8	72	131
EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	2 mg/kg	89.5	73	130
EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	2 mg/kg	96.8	64	137
EP075-EM: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	2 mg/kg	98.6	73	131
EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	2 mg/kg	100	72	132
EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	2 mg/kg	98.2	42	160
EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	2 mg/kg	103	55	148
EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	2 mg/kg	106	73	132
EP075-EM: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	2 mg/kg	105	75	134
EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	2 mg/kg	92.1	73	133
EP075-EM: 4,4`-DDT	50-29-3	0.05	mg/kg	<0.05	2 mg/kg	111	67	133
EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	2 mg/kg	93.1	67	135
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2087295)								
EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	39.6 mg/kg	94.3	63	122

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2095057)								
EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	0.02 mg/L	94.3	84	116
EG020F: Dissolved Metals by ICP-MS (QCLot: 2095059)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.5	91	107
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	100	84	104
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.0	82	103
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.0	83	105
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	104	83	109
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.0	82	106
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	94.3	82	109
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	100	83	109
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	98.9	85	109
EG035F: Dissolved Mercury by FIMS (QCLot: 2095058)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.6	76	114
EG050F: Dissolved Hexavalent Chromium (QCLot: 2088241)								
EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.5 mg/L	103	92	111
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2087349)								
EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	0.2 mg/L	104	75	109
EK040P: Fluoride by PC Titrator (QCLot: 2093420)								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	97.6	87	117
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2088010)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	116	48	124
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2088972)								



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%)	
							Low	High
CAS Number	LOR	Unit						
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2088972) - continued								
EP074: Styrene	100-42-5	5	µg/L	<5	20 µg/L	106	79	116
EP074E: Halogenated Aliphatic Compounds (QCLot: 2088972)								
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	200 µg/L	99.7	53	135
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	20 µg/L	90.9	63	124
EP074: Methylene chloride	75-09-2	5	µg/L	<5	20 µg/L	103	83	122
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	20 µg/L	93.1	68	119
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	20 µg/L	100	77	118
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	20 µg/L	89.5	68	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	20 µg/L	86.6	62	117
EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	20 µg/L	101	81	117
EP074: Trichloroethene	79-01-6	5	µg/L	<5	20 µg/L	95.2	67	120
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	20 µg/L	106	84	117
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	20 µg/L	89.3	67	120
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	20 µg/L	96.6	76	112
EP074: 1,1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	20 µg/L	114	81	124
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	20 µg/L	89.3	62	128
EP074F: Halogenated Aromatic Compounds (QCLot: 2088972)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	20 µg/L	102	81	116
EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	20 µg/L	102	75	118
EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	20 µg/L	99.7	81	113
EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	20 µg/L	92.3	64	122
EP074G: Trihalomethanes (QCLot: 2088972)								
EP074: Chloroform	67-66-3	5	µg/L	<5	20 µg/L	99.6	79	117
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2088011)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	86.0	48	110
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	87.5	50	117
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	81.1	53	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	84.5	54	118
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	90.0	59	119
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	87.8	51	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	85.4	61	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	70.4	56	120
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	78.2	53	120
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	76.9	57	122
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	102	56	131
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	98.8	59	124
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	103	54	124



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2088011) - continued								
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	88.2	55	124
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	88.6	54	124
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	88.6	56	124
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2088013)								
EP075-EM: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	95.2	54	117
EP075-EM: 2,4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	# 122	46	116
EP075-EM: 2,6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	112	61	123
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	4	µg/L	<4	10 µg/L	115	45	116
EP075-EM: 2,4,5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	123	57	131
EP075-EM: 2,4,6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	122	42	126
EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	2	µg/L	<2	20 µg/L	101	54	136
EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/5 8-90-2	2	µg/L	<2	40 µg/L	71.9	53	125
EP075-EM: Pentachlorophenol	87-86-5	2	µg/L	<2	20 µg/L	99.0	32	122
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2088013)								
EP075-EM: Phenol	108-95-2	4	µg/L	<4	10 µg/L	# 52.5	18	51
EP075-EM: 2-Methylphenol	95-48-7	4	µg/L	<4	10 µg/L	91.9	49	106
EP075-EM: 3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	20 µg/L	89.3	41	91
EP075-EM: 2-Nitrophenol	88-75-5	4	µg/L	<4	10 µg/L	114	48	120
EP075-EM: 2,4-Dimethylphenol	105-67-9	4	µg/L	<4	10 µg/L	120	47	128
EP075-EM: 2,4-Dinitrophenol	51-28-5	100	µg/L	<100	60 µg/L	80.2	41	130
EP075-EM: 4-Nitrophenol	100-02-7	50	µg/L	<50	60 µg/L	42.0	19	49
EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	50	µg/L	<50	60 µg/L	80.1	47	126
EP075-EM: Dinoseb	88-85-7	50	µg/L	<50	60 µg/L	85.0	49	128
EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	50	µg/L	<50	50 µg/L	94.6	61	135
EP075I: Organochlorine Pesticides (QCLot: 2088013)								
EP075-EM: alpha-BHC	319-84-6	0.5	µg/L	<0.5	10 µg/L	107	57	126
EP075-EM: Heptachlor	76-44-8	0.5	µg/L	<0.5	10 µg/L	109	62	134
EP075-EM: Aldrin	309-00-2	0.5	µg/L	<0.5	10 µg/L	107	58	133
EP075-EM: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	10 µg/L	103	60	133
EP075-EM: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	10 µg/L	102	59	132
EP075-EM: 4,4`-DDE	72-55-9	0.5	µg/L	<0.5	10 µg/L	102	61	137
EP075-EM: Dieldrin	60-57-1	0.5	µg/L	<0.5	10 µg/L	98.0	59	130
EP075-EM: 4,4`-DDD	72-54-8	0.5	µg/L	<0.5	10 µg/L	95.6	59	135
EP075-EM: 4,4`-DDT	50-29-3	0.5	µg/L	<0.5	10 µg/L	95.0	59	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2088012)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	4331 µg/L	82.5	51	136
EP071: C15 - C28 Fraction	----	100	µg/L	<100	16952 µg/L	88.0	58	139

Matrix Spike (MS) Report

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2090548)							
EM1819706-002	CPT_MW22_061218_0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	87.5	78	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	97.2	84	116
		EG005T: Copper	7440-50-8	50 mg/kg	98.9	82	124
		EG005T: Lead	7439-92-1	50 mg/kg	93.1	76	124
		EG005T: Molybdenum	7439-98-7	50 mg/kg	80.6	79	117
		EG005T: Nickel	7440-02-0	50 mg/kg	101	78	120
		EG005T: Selenium	7782-49-2	50 mg/kg	93.9	71	125
		EG005T: Zinc	7440-66-6	50 mg/kg	101	74	128
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2090545)							
EM1819706-002	CPT_MW22_061218_0.5	EG035T: Mercury	7439-97-6	5 mg/kg	105	76	116
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2092284)							



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2092284) - continued							
EM1819706-002	CPT_MW22_061218_0.5	EG048G: Hexavalent Chromium	18540-29-9	40 mg/kg	81.0	58	114
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2093143)							
EM1819706-002	CPT_MW22_061218_0.5	EK026SF: Total Cyanide	57-12-5	20 mg/kg	102	77	113
EK040T: Fluoride Total (QCLot: 2089902)							
EM1819706-002	CPT_MW22_061218_0.5	EK040T: Fluoride	16984-48-8	400 mg/kg	86.5	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2090772)							
EM1819706-008	CPT_MW01_061218_0.5	EP066-EM: Total Polychlorinated biphenyls	----	1 mg/kg	110	36	152
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2087295)							
EM1819706-002	CPT_MW22_061218_0.5	EP074-UT: Benzene	71-43-2	2 mg/kg	86.4	50	138
		EP074-UT: Toluene	108-88-3	2 mg/kg	84.6	56	134
EP074I: Volatile Halogenated Compounds (QCLot: 2087295)							
EM1819706-002	CPT_MW22_061218_0.5	EP074-UT: 1,1-Dichloroethene	75-35-4	2 mg/kg	86.7	26	141
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	78.7	50	134
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	83.3	28	134
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2090770)							
EM1819706-002	CPT_MW22_061218_0.5	EP075-EM: 2-Chlorophenol	95-57-8	1 mg/kg	99.0	34	118
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	1 mg/kg	110	41	139
		EP075-EM: Pentachlorophenol	87-86-5	1 mg/kg	51.5	10	144
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2090770)							
EM1819706-002	CPT_MW22_061218_0.5	EP075-EM: Phenol	108-95-2	1 mg/kg	101	32	134
		EP075-EM: 2-Nitrophenol	88-75-5	1 mg/kg	88.8	13	129
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2090770)							
EM1819706-002	CPT_MW22_061218_0.5	EP075-EM: Acenaphthene	83-32-9	1 mg/kg	117	46	138
		EP075-EM: Pyrene	129-00-0	1 mg/kg	110	27	169
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2087295)							
EM1819706-002	CPT_MW22_061218_0.5	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	74.6	43	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2090771)							
EM1819706-007	CPT_MW01_061218_0.2	EP071-EM: C10 - C14 Fraction	----	806 mg/kg	117	53	123
		EP071-EM: C15 - C28 Fraction	----	3006 mg/kg	120	70	124
		EP071-EM: C29 - C36 Fraction	----	1584 mg/kg	110	64	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2087295)							
EM1819706-002	CPT_MW22_061218_0.5	EP074-UT: C6 - C10 Fraction	C6_C10	33 mg/kg	71.8	42	106
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2090771)							
EM1819706-007	CPT_MW01_061218_0.2	EP071-EM: >C10 - C16 Fraction	----	1160 mg/kg	115	65	123
		EP071-EM: >C16 - C34 Fraction	----	3978 mg/kg	118	67	121

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 Work Order : EM1819706
 Client : AECOM Australia Pty Ltd
 Project : 60582811



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2090771) - continued							
EM1819706-007	CPT_MW01_061218_0.2	EP071-EM: >C34 - C40 Fraction	----	313 mg/kg	106	44	126
Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2095059)							
EM1819706-013	CPT_QC303_061218	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	95.8	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	100	81	133
		EG020A-F: Copper	7440-50-8	0.2 mg/L	98.3	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	97.0	75	133
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	98.1	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	98.6	75	131
EG035F: Dissolved Mercury by FIMS (QCLot: 2095058)							
EM1819752-006	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	112	70	120
EG050F: Dissolved Hexavalent Chromium (QCLot: 2088241)							
EM1819646-019	Anonymous	EG050F: Hexavalent Chromium	18540-29-9	0.5 mg/L	99.2	59	127
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2087349)							
EM1819713-034	Anonymous	EK026SF: Total Cyanide	57-12-5	0.2 mg/L	110	70	130
EK040P: Fluoride by PC Titrator (QCLot: 2093420)							
EM1819667-010	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	102	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2088972)							
EM1819935-002	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	20 µg/L	121	40	124
		EP074: Trichloroethene	79-01-6	20 µg/L	110	54	126
EP074F: Halogenated Aromatic Compounds (QCLot: 2088972)							
EM1819935-002	Anonymous	EP074: Chlorobenzene	108-90-7	20 µg/L	118	68	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2088973)							
EM1819935-002	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	92.5	43	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2088973)							
EM1819935-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	88.2	44	122
EP080: BTEXN (QCLot: 2088973)							
EM1819935-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	111	68	130
		EP080: Toluene	108-88-3	20 µg/L	117	72	132

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1819706**

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Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Project : 60582811
Site : GIJPP Groundwater Study
Sampler : SM
Order number : 60582811

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 06-Dec-2018
Issue Date : 17-Dec-2018
No. of samples received : 16
No. of samples analysed : 7

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank** value outliers occur.
- **NO Duplicate** outliers occur.
- **NO Matrix Spike** outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075B: Polynuclear Aromatic Hydrocarbons	QC-2090770-001	----	Acenaphthylene	208-96-8	132 %	68-131%	Recovery greater than upper control limit

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075A: Phenolic Compounds (Halogenated)	QC-2088013-001	----	2,4-Dichlorophenol	120-83-2	122 %	46-116%	Recovery greater than upper control limit
EP075A: Phenolic Compounds (Non-halogenated)	QC-2088013-001	----	Phenol	108-95-2	52.5 %	18-51%	Recovery greater than upper control limit

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural CPT_QC303_061218	----	----	----	14-Dec-2018	06-Dec-2018	8

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA001: pH in soil using 0.01M CaCl extract								
Soil Glass Jar - Unpreserved (EA001) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	12-Dec-2018	13-Dec-2018	✓	12-Dec-2018	12-Dec-2018	✓
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	----	----	----	12-Dec-2018	20-Dec-2018	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	12-Dec-2018	04-Jun-2019	✓	12-Dec-2018	04-Jun-2019	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	12-Dec-2018	03-Jan-2019	✓	14-Dec-2018	03-Jan-2019	✓
EG048: Hexavalent Chromium (Alkaline Digest)								
Soil Glass Jar - Unpreserved (EG048G) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	13-Dec-2018	03-Jan-2019	✓	13-Dec-2018	20-Dec-2018	✓
EK026SF: Total CN by Segmented Flow Analyser								
Soil Glass Jar - Unpreserved (EK026SF) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	13-Dec-2018	20-Dec-2018	✓	14-Dec-2018	27-Dec-2018	✓
EK040T: Fluoride Total								
Soil Glass Jar - Unpreserved (EK040T) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	12-Dec-2018	03-Jan-2019	✓	13-Dec-2018	03-Jan-2019	✓
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066-EM) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	13-Dec-2018	21-Jan-2019	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	11-Dec-2018	13-Dec-2018	✓	11-Dec-2018	13-Dec-2018	✓
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	11-Dec-2018	13-Dec-2018	✓	11-Dec-2018	13-Dec-2018	✓
EP074I: Volatile Halogenated Compounds								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	11-Dec-2018	13-Dec-2018	✓	11-Dec-2018	13-Dec-2018	✓
EP075A: Phenolic Compounds (Halogenated)								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	13-Dec-2018	21-Jan-2019	✓
EP075A: Phenolic Compounds (Non-halogenated)								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	13-Dec-2018	21-Jan-2019	✓
EP075B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	13-Dec-2018	21-Jan-2019	✓
EP075I: Organochlorine Pesticides								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	13-Dec-2018	21-Jan-2019	✓
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	11-Dec-2018	13-Dec-2018	✓	11-Dec-2018	13-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP071-EM) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	13-Dec-2018	21-Jan-2019	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	11-Dec-2018	13-Dec-2018	✓	11-Dec-2018	13-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP071-EM) CPT_MW22_061218_0.2, CPT_MW01_061218_0.2,	CPT_MW22_061218_0.5, CPT_MW01_061218_0.5	06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	13-Dec-2018	21-Jan-2019	✓



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) CPT_QC303_061218	06-Dec-2018	----	----	----	14-Dec-2018	06-Dec-2018	✖
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F) CPT_QC303_061218	06-Dec-2018	----	----	----	14-Dec-2018	04-Jun-2019	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) CPT_QC303_061218	06-Dec-2018	----	----	----	17-Dec-2018	03-Jan-2019	✓
EG050F: Dissolved Hexavalent Chromium							
Clear Plastic Bottle - NaOH Filtered (EG050F) CPT_QC303_061218	06-Dec-2018	----	----	----	11-Dec-2018	03-Jan-2019	✓
EK026SF: Total CN by Segmented Flow Analyser							
Opaque plastic bottle - NaOH (EK026SF) CPT_QC303_061218	06-Dec-2018	----	----	----	11-Dec-2018	20-Dec-2018	✓
EK040P: Fluoride by PC Titrator							
Clear Plastic Bottle - Natural (EK040P) CPT_QC303_061218	06-Dec-2018	----	----	----	14-Dec-2018	03-Jan-2019	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066) CPT_QC303_061218	06-Dec-2018	11-Dec-2018	13-Dec-2018	✓	13-Dec-2018	20-Jan-2019	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC303_061218	06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	12-Dec-2018	20-Dec-2018	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC303_061218	06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	12-Dec-2018	20-Dec-2018	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC303_061218	06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	12-Dec-2018	20-Dec-2018	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC303_061218	06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	12-Dec-2018	20-Dec-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) CPT_QC303_061218	06-Dec-2018	11-Dec-2018	13-Dec-2018	✓	13-Dec-2018	20-Jan-2019	✓
EP075A: Phenolic Compounds (Halogenated)							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC303_061218	06-Dec-2018	11-Dec-2018	13-Dec-2018	✓	12-Dec-2018	20-Jan-2019	✓



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075A: Phenolic Compounds (Non-halogenated)							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC303_061218	06-Dec-2018	11-Dec-2018	13-Dec-2018	✓	12-Dec-2018	20-Jan-2019	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC303_061218	06-Dec-2018	11-Dec-2018	13-Dec-2018	✓	12-Dec-2018	20-Jan-2019	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) CPT_QC303_061218	06-Dec-2018	11-Dec-2018	13-Dec-2018	✓	13-Dec-2018	20-Jan-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC303_061218, CPT_QC506_061218	CPT_QC403_061218, 06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	12-Dec-2018	20-Dec-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) CPT_QC303_061218	06-Dec-2018	11-Dec-2018	13-Dec-2018	✓	13-Dec-2018	20-Jan-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC303_061218, CPT_QC506_061218	CPT_QC403_061218, 06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	12-Dec-2018	20-Dec-2018	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC303_061218, CPT_QC506_061218	CPT_QC403_061218, 06-Dec-2018	12-Dec-2018	20-Dec-2018	✓	12-Dec-2018	20-Dec-2018	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **SOIL** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Matrix Spikes (MS) - Continued							
Total Fluoride	EK040T	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	6	16.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	7	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	9	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	7	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	7	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	0	7	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	13	15.38	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	7	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	11	18.18	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	7	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	7	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	0	7	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	7	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001	SOIL	In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3)
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	SOIL	In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3)
Total Fluoride	EK040T	SOIL	(In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
PCB - VIC EPA 448.3 Screen	EP066-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
TRH - Semivolatile Fraction	EP071-EM	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
Volatile Organic Compounds - Ultra-trace	EP074-UT	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)



Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds - Ultra-trace - Summations	EP074-UT-SUM	SOIL	Summation of MAHs and VHCs
Semivolatile Organic Compounds - Waste Classification	EP075-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502)
SVOC - Waste Classification (Sums)	EP075-EM-SUM	SOIL	Summations for EP075 (EM variation)
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Metals by ICP-MS - Suite B	EG020B-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium - Dissolved	EG050F	WATER	In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	WATER	In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



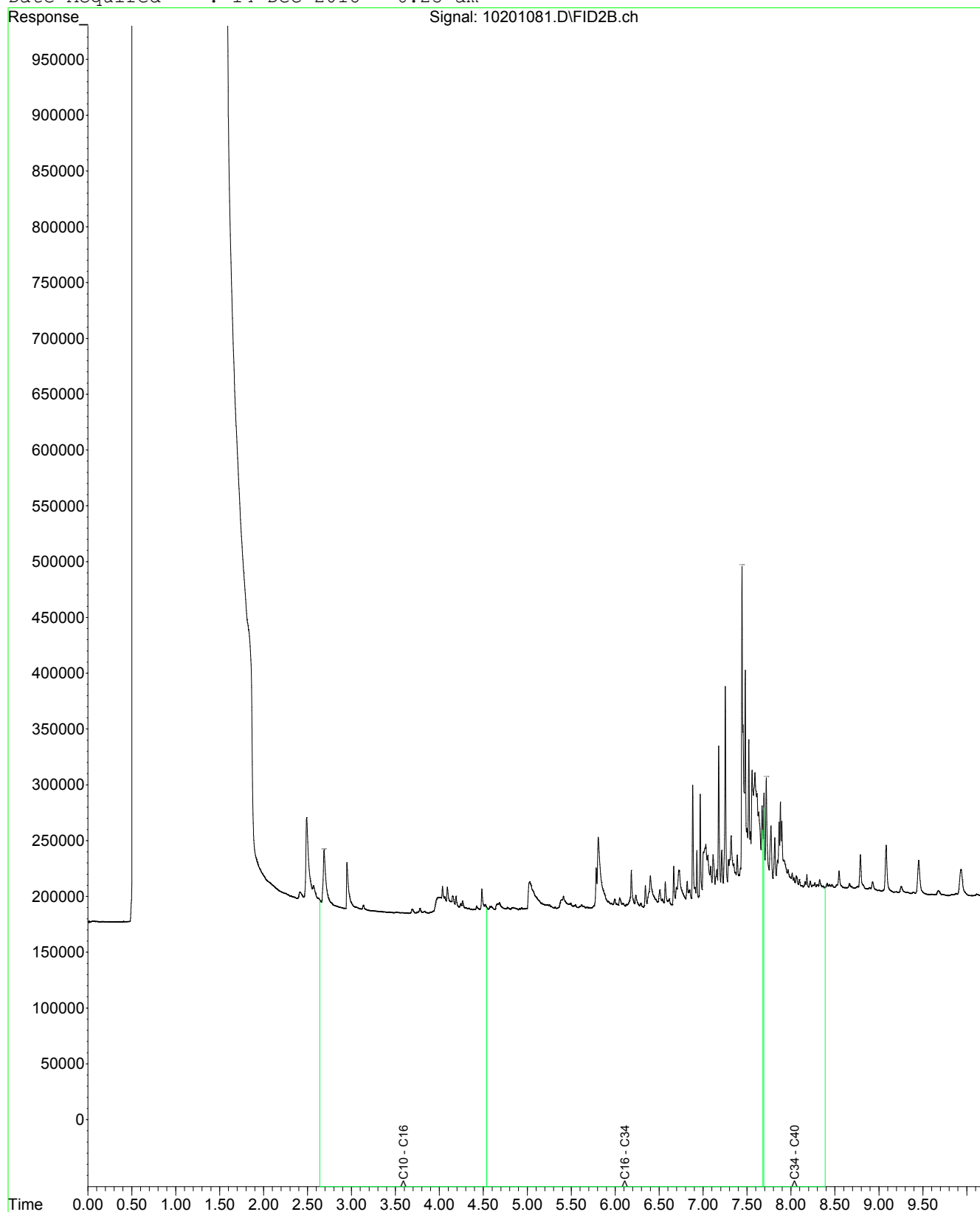
Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Semivolatile Organic Compounds - Waste Classification	EP075-EM	WATER	In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH.
pH in soil using a 0.01M CaCl2 extract	EA001-PR	SOIL	In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
Total Fluoride	EK040T-PR	SOIL	In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Methanolic Extraction of Soils - Ultra-trace.	ORG16-UT	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids - VIC EPA Screen	ORG17-EM	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Separatory Funnel Extraction of Liquids	ORG14-EM	WATER	In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container.

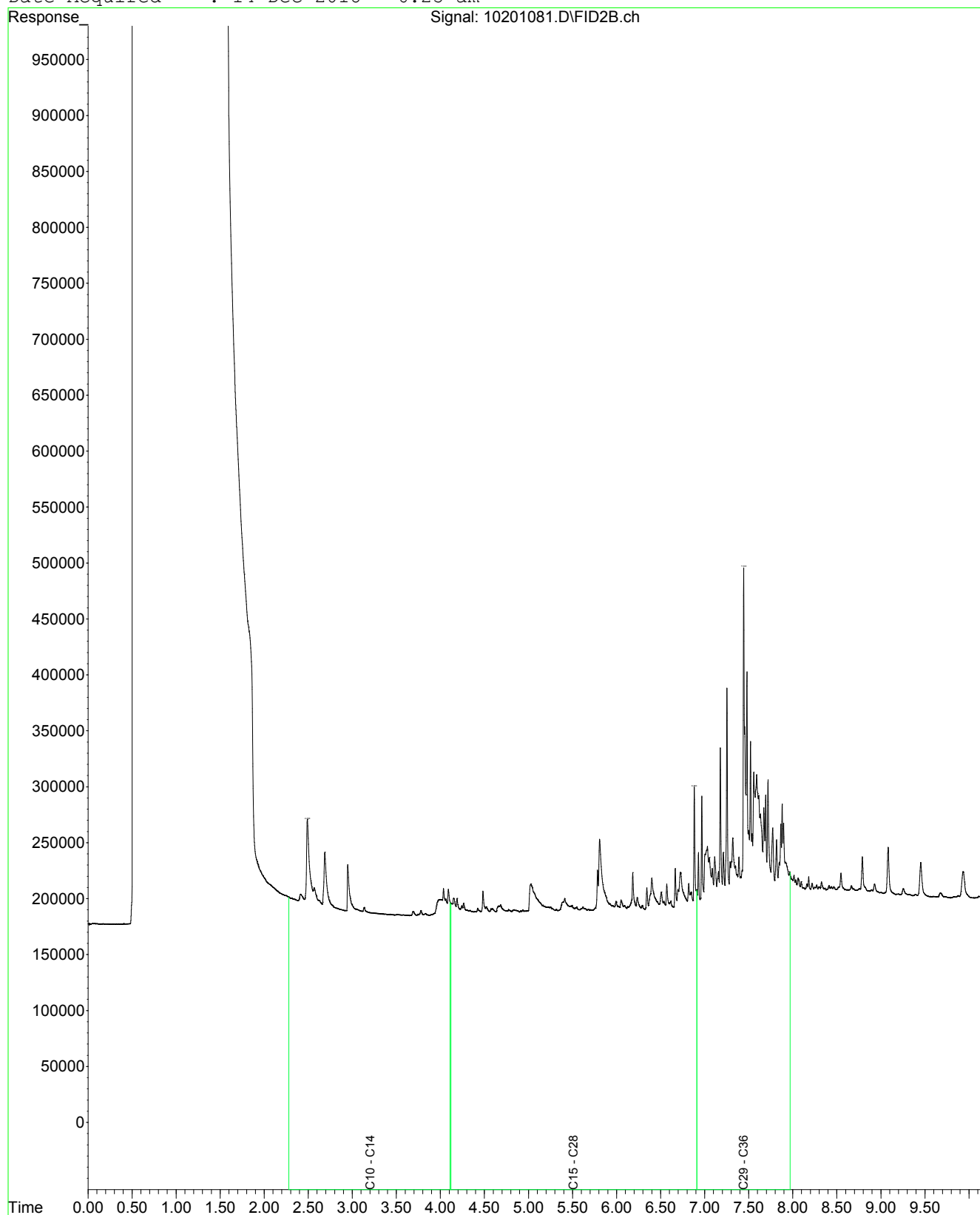


Preparation Methods	Method	Matrix	Method Descriptions
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

Fraction Scheme : NEPM Draft HIL
Data File : 10201081.D
Laboratory Number: EM1819706-001
Sample ID : CPT_MW22_061218_0.2
Date Acquired : 14 Dec 2018 6:25 am



Fraction Scheme : Standard
Data File : 10201081.D
Laboratory Number: EM1819706-001
Sample ID : CPT_MW22_061218_0.2
Date Acquired : 14 Dec 2018 6:25 am



ANZ
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: S. Mculloch		Destination Laboratory																																																																																																							
PROJECT MANAGER (PM):		SITE: GLTP Groundwater Study		MOBILE:		ALS.																																																																																																							
PROJECT NUMBER & TASK CO: 60582811		P.O. NO.:		EMAIL REPORT TO:																																																																																																									
ANALYSIS REQUIRED (Date):		QUOTE NO.: EN/096/18		ANALYSIS REQUIRED INCLUDING SUITES (Note - Suite codes must be listed to attract suite prices)																																																																																																									
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: FOR LABORATORY USE ONLY: COOLER SEAL (circle appropriate) Initial: Yes No N/A SAMPLE TEMPERATURE SHIPPED: Yes No				CONTAINER INFORMATION SAMPLE INFORMATION (note: S = Soil, M = Water) <table border="1"> <thead> <tr> <th>SAMPLE ID</th> <th>MATRIX</th> <th>DATE</th> <th>Time</th> <th>Type / Code</th> <th>Total bottles</th> </tr> </thead> <tr> <td>1 CPT-MW12-071218-0.2</td> <td>S</td> <td>07.12.18</td> <td></td> <td></td> <td>15</td> </tr> <tr> <td>2 CPT-MW12-071218-0.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3 CPT-MW12-071218-1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4 CPT-MW12-071218-2.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5 CPT-MW12-071218-3.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6 CPT-MW12-071218-4.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7 CPT-MW13-071218-0.2</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8 CPT-MW13-071218-0.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9 CPT-MW13-071218-1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10 CPT-MW13-071218-2.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11 CPT-MW13-071218-3.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>12 CPT-MW13-071218-4.0</td> <td>S</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>13 CPT-QC304-071218</td> <td>W</td> <td></td> <td></td> <td></td> <td>66</td> </tr> <tr> <td>14 CPT-QC404-071218</td> <td>W</td> <td></td> <td></td> <td></td> <td>20</td> </tr> <tr> <td>15 CPT-QC508-071218</td> <td>W</td> <td></td> <td></td> <td>SC7</td> <td>20</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>SW1312</td> <td></td> </tr> </table>				SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	1 CPT-MW12-071218-0.2	S	07.12.18			15	2 CPT-MW12-071218-0.5						3 CPT-MW12-071218-1.0						4 CPT-MW12-071218-2.0						5 CPT-MW12-071218-3.0						6 CPT-MW12-071218-4.0						7 CPT-MW13-071218-0.2						8 CPT-MW13-071218-0.5						9 CPT-MW13-071218-1.0						10 CPT-MW13-071218-2.0						11 CPT-MW13-071218-3.0						12 CPT-MW13-071218-4.0	S					13 CPT-QC304-071218	W				66	14 CPT-QC404-071218	W				20	15 CPT-QC508-071218	W			SC7	20					SW1312	
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Name: Sabatien Of: AECOM				Name: Of:																																																																																																									
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; VS = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisphosphate Preserved; V6 = VOA Vial Sodium Bisphosphate Preserved; V5 = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic; F = EDTA Preserved Bottle; E = Zinc Available Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Substrate; B = Unpreserved Bag; J = Unpreserved Jar; U = Unpreserved Glass Jar				Con' Note No: Transport Co:																																																																																																									

COC Page of

[REDACTED]

From: [REDACTED]@aecom.com>
Sent: Thursday, 13 December 2018 11:44 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: ON HOLD - EM1820023 - AECOM 60582811 GIJPP

Hi [REDACTED]

Please analyse:

1. CPT_MW12_071218_0.2 = IWRG621 1
2. CPT_MW12_071218_0.5 = IWRG621 2
3. CPT_MW13_071218_0.2 = IWRG621 3
4. CPT_MW13_071218_0.5 = IWRG621 8
5. QC304_061218 = IWRG621 water equivalent 13
6. QC404_061218 = TPH(C6-C9)/BTEXN 14
7. QC508_061218 = TPH(C6-C9)/BTEXN 15

At standard TAT. Thanks.

[REDACTED]
Senior Environmental Engineer

[REDACTED]
[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

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From: [REDACTED]@alsglobal.com]
Sent: Thursday, 13 December 2018 10:30 AM
To: [REDACTED]
Subject: ON HOLD - EM1820023 - AECOM 60582811 GIJPP

Hi [REDACTED]

Please find attached samples on hold.

Thanks

Regards

[REDACTED]
Client Services – Springvale
Environmental

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1820023**

Client : AECOM Australia Pty Ltd
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004

Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia
3171

E-mail : [REDACTED]
Telephone : ----
Facsimile : ----

E-mail : [REDACTED]@alsglobal.com
Telephone : +6138549 9645
Facsimile : +61-3-8549 9626

Project : 60582811
Order number : ----
C-O-C number : ----
Site : GIJPP Groundwater Study
Sampler : [REDACTED]

Page : 1 of 3
Quote number : EP2016AECOMAU0014 (EN/096/18)
QC Level : NEPM 2013 B3 & ALS QC Standard

Dates

Date Samples Received : 11-Dec-2018 15:40
Client Requested Due : 20-Dec-2018
Date :

Issue Date : 13-Dec-2018
Scheduled Reporting Date : **20-Dec-2018**

Delivery Details

Mode of Delivery : Carrier
No. of coolers/boxes : 1
Receipt Detail :

Security Seal : Not Available
Temperature : 0.7°C - Ice present
No. of samples received / analysed : 15 / 7

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- ### Summary of Sample(s) and Requested Analysis

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold)	No analysis	Soil - E	Moisture	Soil - F	IRWG 6
EM1820023-001	07-Dec-2018 00:00	CPT_MW12_071218_0.2			✓		✓	
EM1820023-002	07-Dec-2018 00:00	CPT_MW12_071218_0.5			✓		✓	
EM1820023-003	07-Dec-2018 00:00	CPT_MW12_071218_1.0	✓					
EM1820023-004	07-Dec-2018 00:00	CPT_MW12_071218_2.0	✓					
EM1820023-005	07-Dec-2018 00:00	CPT_MW12_071218_3.0	✓					
EM1820023-006	07-Dec-2018 00:00	CPT_MW12_071218_4.0	✓					
EM1820023-007	07-Dec-2018 00:00	CPT_MW13_071218_0.2			✓		✓	
EM1820023-008	07-Dec-2018 00:00	CPT_MW13_071218_0.5			✓		✓	
EM1820023-009	07-Dec-2018 00:00	CPT_MW13_071218_1.0	✓					
EM1820023-010	07-Dec-2018 00:00	CPT_MW13_071218_2.0	✓					
EM1820023-011	07-Dec-2018 00:00	CPT_MW13_071218_3.0	✓					
EM1820023-012	07-Dec-2018 00:00	CPT_MW13_071218_4.0	✓					

Matrix: WATER

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER VIC EPA	WATER TRHCG
EM1820023-013	07-Dec-2018 00:00	CPT_QC304_071218	✓	
EM1820023-014	07-Dec-2018 00:00	CPT_QC404_071218		✓
EM1820023-015	07-Dec-2018 00:00	CPT_QC508_071218		✓

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EA005-P: pH by PC Titrator							

Issue Date : 13-Dec-2018
Page : 3 of 3
Work Order : EM1820023 Amendment 0
Client : AECOM Australia Pty Ltd



CPT_QC304_071218	Clear Plastic Bottle - Natural	----	07-Dec-2018	11-Dec-2018	✖	13-Dec-2018	✖
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Requested Deliverables

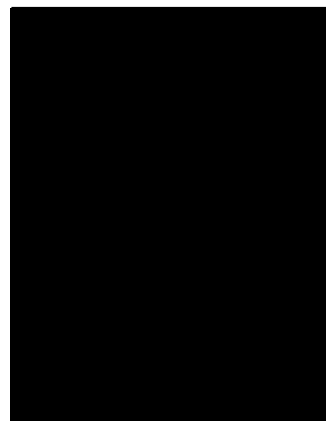
ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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CERTIFICATE OF ANALYSIS

Work Order : **EM1820023**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60582811
Order number : 60582811
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 15
No. of samples analysed : 7

Page : 1 of 14
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 11-Dec-2018 15:40
Date Analysis Commenced : 13-Dec-2018
Issue Date : 20-Dec-2018 15:13



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
[REDACTED]	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
[REDACTED]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW12_071218_0.2	CPT_MW12_071218_0.5	CPT_MW13_071218_0.2	CPT_MW13_071218_0.5	----
Client sampling date / time					07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit	EM1820023-001	EM1820023-002	EM1820023-007	EM1820023-008	-----	
				Result	Result	Result	Result	----	
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit	4.5	5.2	4.6	6.3	----	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	15.3	11.5	15.5	21.7	----	
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	9	----	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----	
Copper	7440-50-8	5	mg/kg	<5	<5	<5	9	----	
Lead	7439-92-1	5	mg/kg	6	5	5	9	----	
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	----	
Nickel	7440-02-0	2	mg/kg	2	5	3	16	----	
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	----	
Silver	7440-22-4	2	mg/kg	<2	<2	<2	<2	----	
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	----	
Zinc	7440-66-6	5	mg/kg	<5	<5	<5	6	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----	
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	<0.5	0.6	----	
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg	<1	<1	1	<1	----	
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg	50	80	80	240	----	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----	
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----	
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----	
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----	
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----	
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----	
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----	
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----	



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW12_071218_0.2	CPT_MW12_071218_0.5	CPT_MW13_071218_0.2	CPT_MW13_071218_0.5	----
Client sampling date / time					07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1820023-001	EM1820023-002	EM1820023-007	EM1820023-008	-----
					Result	Result	Result	Result	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	----
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,1-Dichloroethene	75-35-4	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
Methylene chloride	75-09-2	0.4	mg/kg		<0.4	<0.4	<0.4	<0.4	----
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
Chloroform	67-66-3	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
1,2-Dichloroethane	107-06-2	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
Trichloroethene	79-01-6	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg		<0.04	<0.04	<0.04	<0.04	----
Tetrachloroethene	127-18-4	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
Chlorobenzene	108-90-7	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,4-Dichlorobenzene	106-46-7	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,2-Dichlorobenzene	95-50-1	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	----
1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	<0.01	<0.01	<0.01	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
2,4-Dichlorophenol	120-83-2	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
2,6-Dichlorophenol	87-65-0	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW12_071218_ 0.2	CPT_MW12_071218_ 0.5	CPT_MW13_071218_ 0.2	CPT_MW13_071218_ 0.5	----
Client sampling date / time					07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1820023-001	EM1820023-002	EM1820023-007	EM1820023-008	-----
				Result	Result	Result	Result	Result	----
EP075A: Phenolic Compounds (Halogenated) - Continued									
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Pentachlorophenol	87-86-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		<1	<1	<1	<1	----
2-Methylphenol	95-48-7	1	mg/kg		<1	<1	<1	<1	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	----
2-Nitrophenol	88-75-5	1	mg/kg		<1	<1	<1	<1	----
2,4-Dimethylphenol	105-67-9	1	mg/kg		<1	<1	<1	<1	----
2,4-Dinitrophenol	51-28-5	5	mg/kg		<5	<5	<5	<5	----
4-Nitrophenol	100-02-7	5	mg/kg		<5	<5	<5	<5	----
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg		<5	<5	<5	<5	----
Dinoseb	88-85-7	5	mg/kg		<5	<5	<5	<5	----
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg		<5	<5	<5	<5	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		<1	<1	<1	<1	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW12_071218_ 0.2	CPT_MW12_071218_ 0.5	CPT_MW13_071218_ 0.2	CPT_MW13_071218_ 0.5	----
Client sampling date / time					07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1820023-001	EM1820023-002	EM1820023-007	EM1820023-008	-----
					Result	Result	Result	Result	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
beta-BHC	319-85-7	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
gamma-BHC	58-89-9	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
delta-BHC	319-86-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Heptachlor	76-44-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Aldrin	309-00-2	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
cis-Chlordane	5103-71-9	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
trans-Chlordane	5103-74-2	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Endosulfan 1	959-98-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Dieldrin	60-57-1	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Endrin aldehyde	7421-93-4	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Endrin	72-20-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
Endosulfan 2	33213-65-9	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
4,4'-DDT	50-29-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Methoxychlor	72-43-5	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
^ Sum of organochlorine pesticides	----	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
^ Chlordane	57-74-9	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		<0.03	<0.03	<0.03	<0.03	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW12_071218_ 0.2	CPT_MW12_071218_ 0.5	CPT_MW13_071218_ 0.2	CPT_MW13_071218_ 0.5	----
Client sampling date / time					07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	----
Compound	CAS Number	LOR	Unit		EM1820023-001	EM1820023-002	EM1820023-007	EM1820023-008	-----
				Result	Result	Result	Result	Result	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		106	110	116	117	----
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		85.5	80.9	84.7	85.3	----
Toluene-D8	2037-26-5	0.1	%		89.0	82.9	86.4	86.3	----
4-Bromofluorobenzene	460-00-4	0.1	%		97.0	90.6	95.4	94.6	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		107	113	116	115	----
2-Chlorophenol-D4	93951-73-6	0.025	%		88.0	89.5	89.7	86.5	----
2,4,6-Tribromophenol	118-79-6	0.025	%		79.3	76.0	85.8	73.1	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		110	110	111	109	----
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%		101	101	97.6	95.2	----
2-Fluorobiphenyl	321-60-8	0.025	%		111	106	112	109	----
Anthracene-d10	1719-06-8	0.025	%		115	109	117	110	----
4-Terphenyl-d14	1718-51-0	0.025	%		103	97.7	105	99.3	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC304_071218	CPT_QC404_071218	CPT_QC508_071218	----	----
Client sampling date / time					07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1820023-013	EM1820023-014	EM1820023-015	-----	-----
					Result	Result	Result	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		6.53	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Silver	7440-22-4	0.001	mg/L		<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG050F: Dissolved Hexavalent Chromium									
Hexavalent Chromium	18540-29-9	0.01	mg/L		<0.01	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	0.004	mg/L		<0.004	----	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
^ Total Polychlorinated biphenyls	----	1	µg/L		<1	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	5	µg/L		<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Vinyl chloride	75-01-4	50	µg/L		<50	----	----	----	----
1,1-Dichloroethene	75-35-4	5	µg/L		<5	----	----	----	----
Methylene chloride	75-09-2	5	µg/L		<5	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	5	µg/L		<5	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	5	µg/L		<5	----	----	----	----
1,1,1-Trichloroethane	71-55-6	5	µg/L		<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	----	----	----	----
1,2-Dichloroethane	107-06-2	5	µg/L		<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC304_071218	CPT_QC404_071218	CPT_QC508_071218	----	----
Client sampling date / time					07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1820023-013	EM1820023-014	EM1820023-015	-----	-----
					Result	Result	Result	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1,1,2-Trichloroethane	79-00-5	5	µg/L		<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	----	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L		<5	----	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L		<5	----	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	----	----	----	----
1,4-Dichlorobenzene	106-46-7	5	µg/L		<5	----	----	----	----
1,2-Dichlorobenzene	95-50-1	5	µg/L		<5	----	----	----	----
1,2,4-Trichlorobenzene	120-82-1	5	µg/L		<5	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1,2,3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.6	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	2	µg/L		<2	----	----	----	----
2,4-Dichlorophenol	120-83-2	2	µg/L		<2	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC304_071218	CPT_QC404_071218	CPT_QC508_071218	----	----
Client sampling date / time					07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1820023-013	EM1820023-014	EM1820023-015	-----	-----
					Result	Result	Result	----	----
EP075A: Phenolic Compounds (Halogenated) - Continued									
2,6-Dichlorophenol	87-65-0	2	µg/L		<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	4	µg/L		<4	----	----	----	----
2,4,5-Trichlorophenol	95-95-4	2	µg/L		<2	----	----	----	----
2,4,6-Trichlorophenol	88-06-2	2	µg/L		<2	----	----	----	----
2,3,5,6-Tetrachlorophenol	935-95-5	2	µg/L		<2	----	----	----	----
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	2	µg/L		<2	----	----	----	----
Pentachlorophenol	87-86-5	2	µg/L		<2	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	4	µg/L		<4	----	----	----	----
2-Methylphenol	95-48-7	4	µg/L		<4	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L		<4	----	----	----	----
2-Nitrophenol	88-75-5	4	µg/L		<4	----	----	----	----
2,4-Dimethylphenol	105-67-9	4	µg/L		<4	----	----	----	----
2,4-Dinitrophenol	51-28-5	100	µg/L		<100	----	----	----	----
4-Nitrophenol	100-02-7	50	µg/L		<50	----	----	----	----
2-Methyl-4,6-dinitrophenol	8071-51-0	50	µg/L		<50	----	----	----	----
Dinoseb	88-85-7	50	µg/L		<50	----	----	----	----
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	50	µg/L		<50	----	----	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDT	50-29-3	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC304_071218	CPT_QC404_071218	CPT_QC508_071218	----	----
Client sampling date / time					07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1820023-013	EM1820023-014	EM1820023-015	-----	-----
					Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		83.6	----	----	----	----
EP074S: VOC Surrogates									
1,2-Dichloroethane-D4	17060-07-0	5	%		102	----	----	----	----
Toluene-D8	2037-26-5	5	%		103	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		110	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		38.1	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		76.1	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%		81.7	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		89.8	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		83.4	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		86.7	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC304_071218	CPT_QC404_071218	CPT_QC508_071218	----	----
Client sampling date / time					07-Dec-2018 00:00	07-Dec-2018 00:00	07-Dec-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1820023-013	EM1820023-014	EM1820023-015	-----	-----
					Result	Result	Result	----	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.25	%		32.3	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.25	%		76.0	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.25	%		71.3	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.25	%		98.7	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.25	%		89.8	----	----	----	----
2-Fluorobiphenyl	321-60-8	0.25	%		103	----	----	----	----
Anthracene-d10	1719-06-8	0.25	%		95.2	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.25	%		101	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		116	116	121	----	----
Toluene-D8	2037-26-5	2	%		95.6	86.1	80.8	----	----
4-Bromofluorobenzene	460-00-4	2	%		121	108	106	----	----



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Sub-Matrix: SOIL		□□□□ □ □□ □ s □	
<i>Compound</i>	<i>CAS Number</i>	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1,2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	28	134
2-Chlorophenol-D4	93951-73-6	27	123
2,4,6-Tribromophenol	118-79-6	25	149
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	29	125
1,2-Dichlorobenzene-D4	2199-69-1	31	117
2-Fluorobiphenyl	321-60-8	44	136
Anthracene-d10	1719-06-8	53	133
4-Terphenyl-d14	1718-51-0	59	141

Sub-Matrix: WATER		□□□□ □ □□ □ s □	
<i>Compound</i>	<i>CAS Number</i>	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	125
EP074S: VOC Surrogates			
1,2-Dichloroethane-D4	17060-07-0	72	132
Toluene-D8	2037-26-5	77	132
4-Bromofluorobenzene	460-00-4	67	131
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	13	90
2-Chlorophenol-D4	93951-73-6	42	117
2,4,6-Tribromophenol	118-79-6	52	140
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	49	136

Sub-Matrix: WATER		🔍 📄 📊 📈 📉 📌 📎	
Compound	CAS Number	%	📄 📊 📈 📉 📌 📎
EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued			
1,2-Dichlorobenzene-D4	2199-69-1	49	128
2-Fluorobiphenyl	321-60-8	57	137
Anthracene-d10	1719-06-8	67	137
4-Terphenyl-d14	1718-51-0	66	136
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

Work Order	: EM1820023	Page	: 1 of 8
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]		
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [REDACTED]	E-mail	: [REDACTED]@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60582811	Date Received	: 11-Dec-2018 15:40
Order number	: 60582811	Date Analysed	: 13-Dec-2018
C-O-C number	: ----	Date Issued	: 20-Dec-2018 15:14
No. of samples received	: 15		
No. of samples analysed	: 7	Quote number	: EN/096/18

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Client sample ID		Sampling date/time	CPT_MW12_0 71218_0.2	CPT_MW12_0 71218_0.5	CPT_MW13_0 71218_0.2	CPT_MW13_0 71218_0.5	----
				Sampling date/time	Sampling date/time						
Compound	Method	LOR	Unit	Sampling date/time	Sampling date/time	Sampling date/time	Sampling date/time	Sampling date/time	Sampling date/time		
EA001: pH in soil using 0.01M CaCl extract											
pH (CaCl2)	EA001	0.1	pH Unit	2	12.5	4.5	5.2	4.6	6.3	----	
EG005T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	----	2000	<5	<5	<5	9	----	
Cadmium	EG005T	1	mg/kg	----	400	<1	<1	<1	<1	----	
Copper	EG005T	5	mg/kg	----	20000	<5	<5	<5	9	----	
Lead	EG005T	5	mg/kg	----	6000	6	5	5	9	----	
Molybdenum	EG005T	2	mg/kg	----	4000	<2	<2	<2	<2	----	
Nickel	EG005T	2	mg/kg	----	12000	2	5	3	16	----	
Selenium	EG005T	5	mg/kg	----	200	<5	<5	<5	<5	----	
Silver	EG005T	2	mg/kg	----	720	<2	<2	<2	<2	----	
Zinc	EG005T	5	mg/kg	----	140000	<5	<5	<5	6	----	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	----	300	<0.1	<0.1	<0.1	<0.1	----	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<0.5	<0.5	<0.5	0.6	----	
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg	----	10000	<1	<1	1	<1	----	
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg	----	40000	50	80	80	240	----	
EP074A: Monocyclic Aromatic Hydrocarbons											
Benzene	EP074-UT	0.2	mg/kg	----	16	<0.2	<0.2	<0.2	<0.2	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	240	<0.2	<0.2	<0.2	<0.2	----	
EP074I: Volatile Halogenated Compounds											
Vinyl chloride	EP074-UT	0.02	mg/kg	----	4.8	<0.02	<0.02	<0.02	<0.02	----	
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	11	<0.02	<0.02	<0.02	<0.02	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	50	<0.01	<0.01	<0.01	<0.01	----	
EP075A: Phenolic Compounds (Halogenated)											
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	320	<0.03	<0.03	<0.03	<0.03	----	
EP075A: Phenolic Compounds (Non-halogenated)											
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	2200	<1	<1	<1	<1	----	
EP075B: Polynuclear Aromatic Hydrocarbons											



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

				Client sample ID			CPT_MW12_0 71218_0.2	CPT_MW12_0 71218_0.5	CPT_MW13_0 71218_0.2	CPT_MW13_0 71218_0.5	----
				Sampling date/time	□ □ □ □ □ □	□ □ □ □ □ □	07-Dec-2018 15:00	07-Dec-2018 15:00	07-Dec-2018 15:00	07-Dec-2018 15:00	----
Compound	Method	LOR	Unit		□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □ □ □ □ □	EM1820023-001	EM1820023-002	EM1820023-007	EM1820023-008	-----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----		20	<0.5	<0.5	<0.5	<0.5	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----		400	<0.5	<0.5	<0.5	<0.5	----
EP075I: Organochlorine Pesticides											
Heptachlor	EP075-EM	0.03	mg/kg	----		4.8	<0.03	<0.03	<0.03	<0.03	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----		4.8	<0.03	<0.03	<0.03	<0.03	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----		50	<0.05	<0.05	<0.05	<0.05	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----		16	<0.03	<0.03	<0.03	<0.03	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----		50	<0.03	<0.03	<0.03	<0.03	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----		2600	<10	<10	<10	<10	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----		40000	<50	<50	<50	<50	----

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

Sub-Matrix: SOIL				Client sample ID		CPT_MW12_0 71218_0.2	CPT_MW12_0 71218_0.5	CPT_MW13_0 71218_0.2	CPT_MW13_0 71218_0.5	----		
				Sampling date/time							□□□□ □□	□□□□ □□
				□□ □□ □□ □	□□□□ □□ □						07-Dec-2018 15:00	07-Dec-2018 15:00
Compound	Method	LOR	Unit			EM1820023-001	EM1820023-002	EM1820023-007	EM1820023-008	-----		
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	4	9	4.5	5.2	4.6	6.3	----		
EG005T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	500	<5	<5	<5	9	----		
Cadmium	EG005T	1	mg/kg	----	100	<1	<1	<1	<1	----		
Copper	EG005T	5	mg/kg	----	5000	<5	<5	<5	9	----		
Lead	EG005T	5	mg/kg	----	1500	6	5	5	9	----		
Molybdenum	EG005T	2	mg/kg	----	1000	<2	<2	<2	<2	----		
Nickel	EG005T	2	mg/kg	----	3000	2	5	3	16	----		
Selenium	EG005T	5	mg/kg	----	50	<5	<5	<5	<5	----		
Silver	EG005T	2	mg/kg	----	180	<2	<2	<2	<2	----		
Tin	EG005T	5	mg/kg	----	500	<5	<5	<5	<5	----		
Zinc	EG005T	5	mg/kg	----	35000	<5	<5	<5	6	----		
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	75	<0.1	<0.1	<0.1	<0.1	----		
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	<0.5	<0.5	0.6	----		
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	<1	1	<1	----		
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	10000	50	80	80	240	----		
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	4	<0.2	<0.2	<0.2	<0.2	----		
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	70	<0.2	<0.2	<0.2	<0.2	----		
EP074I: Volatile Halogenated Compounds												
Vinyl chloride	EP074-UT	0.02	mg/kg	----	1.2	<0.02	<0.02	<0.02	<0.02	----		
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	2.8	<0.02	<0.02	<0.02	<0.02	----		
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	10	<0.01	<0.01	<0.01	<0.01	----		
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	<0.03	<0.03	<0.03	----		
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	560	<1	<1	<1	<1	----		
EP075B: Polynuclear Aromatic Hydrocarbons												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

				Client sample ID			CPT_MW12_0 71218_0.2	CPT_MW12_0 71218_0.5	CPT_MW13_0 71218_0.2	CPT_MW13_0 71218_0.5	----
				Sampling date/time	□ □ □ □ □ □	□ □ □ □ □ □	07-Dec-2018 15:00	07-Dec-2018 15:00	07-Dec-2018 15:00	07-Dec-2018 15:00	----
Compound	Method	LOR	Unit		□ □ □ □ □ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □ □ □ □ □	EM1820023-001	EM1820023-002	EM1820023-007	EM1820023-008	-----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----		5	<0.5	<0.5	<0.5	<0.5	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----		100	<0.5	<0.5	<0.5	<0.5	----
EP075I: Organochlorine Pesticides											
Heptachlor	EP075-EM	0.03	mg/kg	----		1.2	<0.03	<0.03	<0.03	<0.03	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----		1.2	<0.03	<0.03	<0.03	<0.03	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----		50	<0.05	<0.05	<0.05	<0.05	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----		4	<0.03	<0.03	<0.03	<0.03	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----		10	<0.03	<0.03	<0.03	<0.03	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----		650	<10	<10	<10	<10	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----		10000	<50	<50	<50	<50	----

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

Sub-Matrix: SOIL				Client sample ID		CPT_MW12_0 71218_0.2	CPT_MW12_0 71218_0.5	CPT_MW13_0 71218_0.2	CPT_MW13_0 71218_0.5	----		
				Sampling date/time							□□□□ □□	□□□□ □□
				□□ □□ □□ □	□□□□ □□ □						07-Dec-2018 15:00	07-Dec-2018 15:00
Compound	Method	LOR	Unit			EM1820023-001	EM1820023-002	EM1820023-007	EM1820023-008			
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	4	9	4.5	5.2	4.6	6.3	----		
EG005T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	20	<5	<5	<5	9	----		
Cadmium	EG005T	1	mg/kg	----	3	<1	<1	<1	<1	----		
Copper	EG005T	5	mg/kg	----	100	<5	<5	<5	9	----		
Lead	EG005T	5	mg/kg	----	300	6	5	5	9	----		
Molybdenum	EG005T	2	mg/kg	----	40	<2	<2	<2	<2	----		
Nickel	EG005T	2	mg/kg	----	60	2	5	3	16	----		
Selenium	EG005T	5	mg/kg	----	10	<5	<5	<5	<5	----		
Silver	EG005T	2	mg/kg	----	10	<2	<2	<2	<2	----		
Tin	EG005T	5	mg/kg	----	50	<5	<5	<5	<5	----		
Zinc	EG005T	5	mg/kg	----	200	<5	<5	<5	6	----		
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	1	<0.1	<0.1	<0.1	<0.1	----		
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1	<0.5	<0.5	<0.5	0.6	----		
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	50	<1	<1	1	<1	----		
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	450	50	80	80	240	----		
EP066: Polychlorinated Biphenyls (PCB)												
Total Polychlorinated biphenyls	EP066-EM	0.1	mg/kg	----	2	<0.1	<0.1	<0.1	<0.1	----		
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	1	<0.2	<0.2	<0.2	<0.2	----		
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	7	<0.2	<0.2	<0.2	<0.2	----		
EP074I: Volatile Halogenated Compounds												
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	1	<0.01	<0.01	<0.01	<0.01	----		
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	<0.03	<0.03	<0.03	----		
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	60	<1	<1	<1	<1	----		
EP075B: Polynuclear Aromatic Hydrocarbons												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL				Client sample ID		CPT_MW12_0 71218_0.2	CPT_MW12_0 71218_0.5	CPT_MW13_0 71218_0.2	CPT_MW13_0 71218_0.5	----
				Sampling date/time						
				Compound	Method	LOR	Unit	□□□□ □□ □□□ □	□□□□ □□ □□□ □	EM1820023-001
EP075B: Polynuclear Aromatic Hydrocarbons - Continued										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	1	<0.5	<0.5	<0.5	<0.5	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	20	<0.5	<0.5	<0.5	<0.5	----
EP075I: Organochlorine Pesticides										
Sum of organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	<0.03	<0.03	<0.03	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	100	<10	<10	<10	<10	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	1000	<50	<50	<50	<50	----

QUALITY CONTROL REPORT

Work Order	: EM1820023	Page	: 1 of 19
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60582811	Date Samples Received	: 11-Dec-2018
Order number	: 60582811	Date Analysis Commenced	: 13-Dec-2018
C-O-C number	: ----	Issue Date	: 20-Dec-2018
Sampler	: [REDACTED]		
Site	: GIJPP Groundwater Study		
Quote number	: EN/096/18		
No. of samples received	: 15		
No. of samples analysed	: 7		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]
[REDACTED]

Senior Inorganic Chemist
2IC Organic Chemist
Senior Organic Chemist

Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2093618)									
EM1820010-001	Anonymous	EA001: pH (CaCl ₂)	----	0.1	pH Unit	10.0	10.1	0.994	0% - 20%
EM1820010-026	Anonymous	EA001: pH (CaCl ₂)	----	0.1	pH Unit	9.3	9.3	0.00	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2093643)									
EM1820023-001	CPT_MW12_071218_0.2	EA055: Moisture Content	----	0.1	%	15.3	15.1	1.38	0% - 50%
EM1820073-016	Anonymous	EA055: Moisture Content	----	0.1	%	5.1	6.8	28.3	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 2098220)									
EM1820023-001	CPT_MW12_071218_0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	4	56.9	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	2	0.00	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	6	5	0.00	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
EM1820179-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.00	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	7	6	0.00	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QC Lot: 2098220) - continued									
EM1820179-001	Anonymous	EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	9	9	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2098219)									
EM1820023-001	CPT_MW12_071218_0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1820179-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2100704)									
EM1820023-001	CPT_MW12_071218_0.2	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1820073-023	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2101757)									
EM1820023-001	CPT_MW12_071218_0.2	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.00	No Limit
EM1820073-023	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	1	1	0.00	No Limit
EK040T: Fluoride Total (QC Lot: 2094851)									
EM1820005-001	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	<40	<40	0.00	No Limit
EM1820073-005	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	180	140	23.2	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2094913)									
EM1820023-001	CPT_MW12_071218_0.2	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1820073-030	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2093599)									
EM1820023-001	CPT_MW12_071218_0.2	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1820073-030	Anonymous	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2093599)									
EM1820023-001	CPT_MW12_071218_0.2	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EM1820073-030	Anonymous	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP074I: Volatile Halogenated Compounds (QC Lot: 2093599)									
EM1820023-001	CPT_MW12_071218_0.2	EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074I: Volatile Halogenated Compounds (QC Lot: 2093599) - continued									
EM1820023-001	CPT_MW12_071218_0.2	EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.00	No Limit
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.00	No Limit
EM1820073-030	Anonymous	EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.00	No Limit
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.00	No Limit
		EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2094911)							
EM1820073-030	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: 2,4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: 2,6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.14	<0.14	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2094911) - continued									
EM1820073-030	Anonymous	EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: 2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: 2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-9 0-2	0.05	mg/kg	<0.28	<0.29	0.00	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EM1820023-001	CPT_MW12_071218_0.2	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2,4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2,6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-9 0-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2094911)									
EM1820073-030	Anonymous	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2,4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2,4-Dinitrophenol	51-28-5	5	mg/kg	<6	<6	0.00	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<6	<6	0.00	No Limit
		EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<6	<6	0.00	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<6	<6	0.00	No Limit
EM1820023-001	CPT_MW12_071218_0.2	EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<6	<6	0.00	No Limit
		EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2,4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2,4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.00	No Limit
EM1820073-030	Anonymous	EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.00	No Limit
		EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2094911)							
		EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	0.5	0.6	22.4	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2094911) - continued									
EM1820073-030	Anonymous	EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	3.7	3.0	19.8	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	1.4	1.3	12.7	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	25.9	# 16.6	43.3	0% - 20%
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	5.5	# 3.2	52.2	0% - 50%
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	29.4	# 20.2	37.1	0% - 20%
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	30.2	# 20.7	37.6	0% - 20%
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	12.7	# 8.7	37.2	0% - 20%
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	11.8	# 8.4	33.1	0% - 20%
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2	0.5	mg/kg	20.0	# 15.3	26.6	0% - 20%
			207-08-9						
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	13.4	# 10.1	28.5	0% - 20%
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	5.4	4.3	23.8	0% - 50%
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	1.7	1.3	26.9	No Limit
		EP075-EM: Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	6.1	4.9	21.7	0% - 50%
EM1820023-001	CPT_MW12_071218_0.2	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			207-08-9						
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
EP075-EM: Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
EP075I: Organochlorine Pesticides (QC Lot: 2094911)									
EM1820073-030	Anonymous	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.14	<0.14	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075I: Organochlorine Pesticides (QC Lot: 2094911) - continued									
EM1820073-030	Anonymous	EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.14	<0.14	0.00	No Limit
EM1820023-001	CPT_MW12_071218_0.2	EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.14	<0.14	0.00	No Limit
		EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2093599)									
EM1820023-001	CPT_MW12_071218_0.2	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EM1820073-030	Anonymous	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2094912)									
EM1820073-030	Anonymous	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	630	480	26.2	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	330	330	0.00	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM1820023-001	CPT_MW12_071218_0.2	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2094912) - continued									
EM1820023-001	CPT_MW12_071218_0.2	EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2093599)									
EM1820023-001	CPT_MW12_071218_0.2	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.00	No Limit
EM1820073-030	Anonymous	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2094912)									
EM1820073-030	Anonymous	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	870	720	18.7	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	140	160	11.9	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM1820023-001	CPT_MW12_071218_0.2	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA005P: pH by PC Titrator (QC Lot: 2102099)									
EM1820023-013	CPT_QC304_071218	EA005-P: pH Value	----	0.01	pH Unit	6.53	6.27	4.06	0% - 20%
EM1819815-108	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	4.51	4.50	0.222	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2103608)									
EM1820023-013	CPT_QC304_071218	EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	0.001	0.00	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2103610)									
EM1820093-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0001	0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.094	0.093	0.00	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.013	0.013	0.00	0% - 50%
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.002	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.071	0.070	1.44	0% - 20%
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.114	0.113	0.00	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1820023-013	CPT_QC304_071218	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG035F: Dissolved Mercury by FIMS (QC Lot: 2103609)									
EM1820023-013	CPT_QC304_071218	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 2105095)									
EM1819533-004	Anonymous	EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1819620-004	Anonymous	EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.10	<0.10	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2097584)									
EM1820028-005	Anonymous	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	0.00	No Limit
EM1820028-002	Anonymous	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	0.102	0.103	1.13	0% - 20%
EK040P: Fluoride by PC Titrator (QC Lot: 2102101)									
EM1819815-112	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.2	0.2	0.00	No Limit
EM1820149-001	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.4	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2097689)									
EM1820023-013	CPT_QC304_071218	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2097689)									
EM1820023-013	CPT_QC304_071218	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Methylene chloride	75-09-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2097689)									
EM1820023-013	CPT_QC304_071218	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2097689)									
EM1820023-013	CPT_QC304_071218	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2094753)									
EM1820115-006	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2097690)									
EM1820127-022	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	90	70	22.4	No Limit
EM1820023-013	CPT_QC304_071218	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2094753)									
EM1820115-006	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2097690)									
EM1820127-022	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	80	70	21.0	No Limit
EM1820023-013	CPT_QC304_071218	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2097690)									
EM1820127-022	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
EM1820023-013	CPT_QC304_071218	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result			LCS	Low
EG005T: Total Metals by ICP-AES (QCLot: 2098220)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	81.4	78	107
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	79.1	76	108
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	82.7	78	108
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	81.4	78	106
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	101	78	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	85.7	80	109
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	101	92	110
EG005T: Silver	7440-22-4	2	mg/kg	<2	2.1 mg/kg	95.8	80	108
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.2 mg/kg	79.3	78	117
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	84.4	79	110
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2098219)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	84.6	77	104
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2100704)								
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	78.4	75	112
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2101757)								
EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	20 mg/kg	93.2	80	107
EK040T: Fluoride Total (QCLot: 2094851)								
EK040T: Fluoride	16984-48-8	40	mg/kg	<40	400 mg/kg	89.0	75	110
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2094913)								
EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	117	63	118
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2093599)								
EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	2.1 mg/kg	95.4	68	117
EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	2.1 mg/kg	95.2	67	118
EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.1 mg/kg	94.6	66	119
EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	4.2 mg/kg	92.0	66	115
	106-42-3							
EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	2.1 mg/kg	91.3	71	115
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2.1 mg/kg	92.2	68	113
EP074H: Naphthalene (QCLot: 2093599)								
EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	0.6 mg/kg	104	75	113
EP074I: Volatile Halogenated Compounds (QCLot: 2093599)								
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	92.5	51	136
EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	98.3	56	125



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP074I: Volatile Halogenated Compounds (QCLot: 2093599) - continued								
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	94.3	70	117
EP074-UT: trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	94.2	61	122
EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	93.3	70	114
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	93.9	69	112
EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	96.9	62	124
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	99.3	56	126
EP074-UT: 1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	87.9	73	118
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	95.0	66	117
EP074-UT: 1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	85.5	76	115
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	94.6	62	120
EP074-UT: 1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	0.1 mg/kg	92.2	71	118
EP074-UT: 1,1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	82.0	69	119
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	114	47	125
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	93.1	73	114
EP074-UT: 1,4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	94.2	66	114
EP074-UT: 1,2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	93.4	73	110
EP074-UT: 1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	108	54	121
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2094911)								
EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	2 mg/kg	103	69	123
EP075-EM: 2,4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	2 mg/kg	111	55	128
EP075-EM: 2,6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	2 mg/kg	120	70	123
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	2 mg/kg	125	56	128
EP075-EM: 2,4,5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	2 mg/kg	119	66	126
EP075-EM: 2,4,6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	2 mg/kg	122	60	126
EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	4 mg/kg	100	65	124
EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/5 8-90-2	0.05	mg/kg	<0.05	8 mg/kg	83.7	64	128
EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	4 mg/kg	108	43	127
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2094911)								
EP075-EM: Phenol	108-95-2	1	mg/kg	<1	2 mg/kg	110	58	126
EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	2 mg/kg	106	65	126
EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	4 mg/kg	112	64	123
EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	2 mg/kg	112	53	128
EP075-EM: 2,4-Dimethylphenol	105-67-9	1	mg/kg	<1	2 mg/kg	112	56	136
EP075-EM: 2,4-Dinitrophenol	51-28-5	5	mg/kg	<5	12 mg/kg	109	41	156
EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	12 mg/kg	94.7	48	130
EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<5	12 mg/kg	86.5	47	125
EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	12 mg/kg	79.2	51	123
EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<5	10 mg/kg	73.8	36	137



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2094911)								
EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	2 mg/kg	117	70	123
EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	2 mg/kg	118	70	130
EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	2 mg/kg	128	68	131
EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	2 mg/kg	117	72	128
EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	2 mg/kg	121	75	128
EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	2 mg/kg	124	55	127
EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	2 mg/kg	114	75	128
EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	2 mg/kg	117	73	130
EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	2 mg/kg	114	72	131
EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	2 mg/kg	117	77	133
EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	108	76	133
	207-08-9							
EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	2 mg/kg	107	70	130
EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	2 mg/kg	112	72	134
EP075-EM: Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	2 mg/kg	112	72	135
EP075-EM: Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	2 mg/kg	113	71	134
EP075I: Organochlorine Pesticides (QCLot: 2094911)								
EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	2 mg/kg	103	71	122
EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	2 mg/kg	92.3	70	126
EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	2 mg/kg	109	70	130
EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	2 mg/kg	102	71	129
EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	2 mg/kg	118	74	128
EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	2 mg/kg	101	72	126
EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	2 mg/kg	104	72	127
EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	2 mg/kg	95.4	73	129
EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	2 mg/kg	88.6	72	131
EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	2 mg/kg	90.2	73	130
EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	2 mg/kg	96.0	64	137
EP075-EM: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	2 mg/kg	96.3	73	131
EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	2 mg/kg	98.4	72	132
EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	2 mg/kg	99.9	42	160
EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	2 mg/kg	101	55	148
EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	2 mg/kg	102	73	132
EP075-EM: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	2 mg/kg	102	75	134
EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	2 mg/kg	91.5	73	133
EP075-EM: 4,4`-DDT	50-29-3	0.05	mg/kg	<0.05	2 mg/kg	108	67	133
EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	2 mg/kg	90.3	67	135
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2093599)								
EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	39.6 mg/kg	103	63	122

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2103608)								
EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	0.02 mg/L	104	84	116
EG020F: Dissolved Metals by ICP-MS (QCLot: 2103610)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.6	91	107
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	103	84	104
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.0	82	103
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.6	83	105
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	102	83	109
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.3	82	106
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	96.0	82	109
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	99.5	83	109
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	95.8	85	109
EG035F: Dissolved Mercury by FIMS (QCLot: 2103609)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	96.5	76	114
EG050F: Dissolved Hexavalent Chromium (QCLot: 2105095)								
EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.5 mg/L	94.0	92	111
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2097584)								
EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	0.2 mg/L	76.3	75	109
EK040P: Fluoride by PC Titrator (QCLot: 2102101)								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	99.6	87	117
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2094751)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	78.4	48	124
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2097689)								



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
CAS Number	LOR	Unit	Result					
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2097689) - continued								
EP074: Styrene	100-42-5	5	µg/L	<5	20 µg/L	92.7	79	116
EP074E: Halogenated Aliphatic Compounds (QCLot: 2097689)								
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	200 µg/L	110	53	135
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	20 µg/L	104	63	124
EP074: Methylene chloride	75-09-2	5	µg/L	<5	20 µg/L	108	83	122
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	20 µg/L	106	68	119
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	20 µg/L	105	77	118
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	20 µg/L	103	68	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	20 µg/L	95.8	62	117
EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	20 µg/L	105	81	117
EP074: Trichloroethene	79-01-6	5	µg/L	<5	20 µg/L	108	67	120
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	20 µg/L	92.8	84	117
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	20 µg/L	96.3	67	120
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	20 µg/L	95.8	76	112
EP074: 1,1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	20 µg/L	96.1	81	124
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	20 µg/L	118	62	128
EP074F: Halogenated Aromatic Compounds (QCLot: 2097689)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	20 µg/L	101	81	116
EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	20 µg/L	97.2	75	118
EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	20 µg/L	100	81	113
EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	20 µg/L	119	64	122
EP074G: Trihalomethanes (QCLot: 2097689)								
EP074: Chloroform	67-66-3	5	µg/L	<5	20 µg/L	104	79	117
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2094752)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	99.9	48	110
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	98.2	50	117
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	90.7	53	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	92.1	54	118
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	90.8	59	119
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	88.3	51	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	89.4	61	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	90.0	56	120
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	91.5	53	120
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	91.2	57	122
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	103	56	131
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	98.5	59	124
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	102	54	124



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%)	
							Low	High
CAS Number	LOR	Unit						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2094752) - continued								
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	92.8	55	124
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	93.4	54	124
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	92.0	56	124
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2094755)								
EP075-EM: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	61.2	54	117
EP075-EM: 2,4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	72.2	46	116
EP075-EM: 2,6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	76.7	61	123
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	4	µg/L	<4	10 µg/L	75.0	45	116
EP075-EM: 2,4,5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	77.2	57	131
EP075-EM: 2,4,6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	80.8	42	126
EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	2	µg/L	<2	10 µg/L	136	54	136
EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/5 8-90-2	2	µg/L	<2	20 µg/L	106	53	125
EP075-EM: Pentachlorophenol	87-86-5	2	µg/L	<2	20 µg/L	57.8	32	122
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2094755)								
EP075-EM: Phenol	108-95-2	4	µg/L	<4	10 µg/L	26.2	18	51
EP075-EM: 2-Methylphenol	95-48-7	4	µg/L	<4	10 µg/L	53.2	49	106
EP075-EM: 3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	20 µg/L	52.3	41	91
EP075-EM: 2-Nitrophenol	88-75-5	4	µg/L	<4	10 µg/L	75.3	48	120
EP075-EM: 2,4-Dimethylphenol	105-67-9	4	µg/L	<4	10 µg/L	71.9	47	128
EP075-EM: 2,4-Dinitrophenol	51-28-5	100	µg/L	<100	60 µg/L	49.7	41	130
EP075-EM: 4-Nitrophenol	100-02-7	50	µg/L	<50	60 µg/L	25.3	19	49
EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	50	µg/L	<50	60 µg/L	51.6	47	126
EP075-EM: Dinoseb	88-85-7	50	µg/L	<50	60 µg/L	61.6	49	128
EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	50	µg/L	<50	50 µg/L	69.5	61	135
EP075I: Organochlorine Pesticides (QCLot: 2094755)								
EP075-EM: alpha-BHC	319-84-6	0.5	µg/L	<0.5	10 µg/L	69.4	57	126
EP075-EM: Heptachlor	76-44-8	0.5	µg/L	<0.5	10 µg/L	66.3	62	134
EP075-EM: Aldrin	309-00-2	0.5	µg/L	<0.5	10 µg/L	67.0	58	133
EP075-EM: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	10 µg/L	68.7	60	133
EP075-EM: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	10 µg/L	69.4	59	132
EP075-EM: 4,4'-DDE	72-55-9	0.5	µg/L	<0.5	10 µg/L	69.1	61	137
EP075-EM: Dieldrin	60-57-1	0.5	µg/L	<0.5	10 µg/L	64.0	59	130
EP075-EM: 4,4'-DDD	72-54-8	0.5	µg/L	<0.5	10 µg/L	67.7	59	135
EP075-EM: 4,4'-DDT	50-29-3	0.5	µg/L	<0.5	10 µg/L	70.6	59	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2094753)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	4331 µg/L	83.3	51	136
EP071: C15 - C28 Fraction	----	100	µg/L	<100	16952 µg/L	90.9	58	139

Matrix Spike (MS) Report

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2098220)							
EM1820023-002	CPT_MW12_071218_0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	89.6	78	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	91.2	84	116
		EG005T: Copper	7440-50-8	50 mg/kg	94.8	82	124
		EG005T: Lead	7439-92-1	50 mg/kg	95.8	76	124
		EG005T: Molybdenum	7439-98-7	50 mg/kg	97.6	79	117
		EG005T: Nickel	7440-02-0	50 mg/kg	94.3	78	120
		EG005T: Selenium	7782-49-2	50 mg/kg	82.3	71	125
		EG005T: Zinc	7440-66-6	50 mg/kg	92.3	74	128
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2098219)							
EM1820023-002	CPT_MW12_071218_0.5	EG035T: Mercury	7439-97-6	5 mg/kg	96.7	76	116
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2100704)							



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2100704) - continued							
EM1820023-002	CPT_MW12_071218_0.5	EG048G: Hexavalent Chromium	18540-29-9	40 mg/kg	69.3	58	114
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2101757)							
EM1820023-002	CPT_MW12_071218_0.5	EK026SF: Total Cyanide	57-12-5	20 mg/kg	104	77	113
EK040T: Fluoride Total (QCLot: 2094851)							
EM1820005-008	Anonymous	EK040T: Fluoride	16984-48-8	400 mg/kg	92.0	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2094913)							
EM1820023-008	CPT_MW13_071218_0.5	EP066-EM: Total Polychlorinated biphenyls	----	1 mg/kg	116	36	152
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2093599)							
EM1820023-002	CPT_MW12_071218_0.5	EP074-UT: Benzene	71-43-2	2 mg/kg	82.1	50	138
		EP074-UT: Toluene	108-88-3	2 mg/kg	80.3	56	134
EP074I: Volatile Halogenated Compounds (QCLot: 2093599)							
EM1820023-002	CPT_MW12_071218_0.5	EP074-UT: 1,1-Dichloroethene	75-35-4	2 mg/kg	87.8	26	141
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	75.6	50	134
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	77.8	28	134
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2094911)							
EM1820023-002	CPT_MW12_071218_0.5	EP075-EM: 2-Chlorophenol	95-57-8	1 mg/kg	105	34	118
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	1 mg/kg	106	41	139
		EP075-EM: Pentachlorophenol	87-86-5	1 mg/kg	62.3	10	144
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2094911)							
EM1820023-002	CPT_MW12_071218_0.5	EP075-EM: Phenol	108-95-2	1 mg/kg	107	32	134
		EP075-EM: 2-Nitrophenol	88-75-5	1 mg/kg	109	13	129
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2094911)							
EM1820023-002	CPT_MW12_071218_0.5	EP075-EM: Acenaphthene	83-32-9	1 mg/kg	121	46	138
		EP075-EM: Pyrene	129-00-0	1 mg/kg	116	27	169
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2093599)							
EM1820023-002	CPT_MW12_071218_0.5	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	79.8	43	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2094912)							
EM1820023-007	CPT_MW13_071218_0.2	EP071-EM: C10 - C14 Fraction	----	806 mg/kg	102	53	123
		EP071-EM: C15 - C28 Fraction	----	3006 mg/kg	107	70	124
		EP071-EM: C29 - C36 Fraction	----	1584 mg/kg	101	64	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2093599)							
EM1820023-002	CPT_MW12_071218_0.5	EP074-UT: C6 - C10 Fraction	C6_C10	33 mg/kg	76.4	42	106
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2094912)							
EM1820023-007	CPT_MW13_071218_0.2	EP071-EM: >C10 - C16 Fraction	----	1160 mg/kg	106	65	123
		EP071-EM: >C16 - C34 Fraction	----	3978 mg/kg	105	67	121

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 Work Order : EM1820023
 Client : AECOM Australia Pty Ltd
 Project : 60582811



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2094912) - continued							
EM1820023-007	CPT_MW13_071218_0.2	EP071-EM: >C34 - C40 Fraction	----	313 mg/kg	101	44	126
Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2103610)							
EM1820023-013	CPT_QC304_071218	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	91.7	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	104	81	133
		EG020A-F: Copper	7440-50-8	0.2 mg/L	92.7	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	90.4	75	133
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	90.7	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	94.8	75	131
EG035F: Dissolved Mercury by FIMS (QCLot: 2103609)							
EM1820115-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	90.7	70	120
EG050F: Dissolved Hexavalent Chromium (QCLot: 2105095)							
EM1819533-006	Anonymous	EG050F: Hexavalent Chromium	18540-29-9	0.5 mg/L	97.6	59	127
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2097584)							
EM1820004-001	Anonymous	EK026SF: Total Cyanide	57-12-5	0.2 mg/L	96.4	70	130
EK040P: Fluoride by PC Titrator (QCLot: 2102101)							
EM1819815-113	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	83.4	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2097689)							
EM1820083-002	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	20 µg/L	119	40	124
		EP074: Trichloroethene	79-01-6	20 µg/L	92.9	54	126
EP074F: Halogenated Aromatic Compounds (QCLot: 2097689)							
EM1820083-002	Anonymous	EP074: Chlorobenzene	108-90-7	20 µg/L	96.8	68	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2097690)							
EM1820083-002	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	89.8	43	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2097690)							
EM1820083-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	85.6	44	122
EP080: BTEXN (QCLot: 2097690)							
EM1820083-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	117	68	130
		EP080: Toluene	108-88-3	20 µg/L	101	72	132

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1820023	Page	: 1 of 13
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Telephone	: +6138549 9645
Project	: 60582811	Date Samples Received	: 11-Dec-2018
Site	: GIJPP Groundwater Study	Issue Date	: 20-Dec-2018
Sampler	: [REDACTED]	No. of samples received	: 15
Order number	: 60582811	No. of samples analysed	: 7

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- Duplicate outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EP075B: Polynuclear Aromatic Hydrocarbons	EM1820073--030	Anonymous	Phenanthrene	85-01-8	43.3 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM1820073--030	Anonymous	Anthracene	120-12-7	52.2 %	0% - 50%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM1820073--030	Anonymous	Fluoranthene	206-44-0	37.1 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM1820073--030	Anonymous	Pyrene	129-00-0	37.6 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM1820073--030	Anonymous	Benz(a)anthracene	56-55-3	37.2 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM1820073--030	Anonymous	Chrysene	218-01-9	33.1 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM1820073--030	Anonymous	Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	26.6 %	0% - 20%	RPD exceeds LOR based limits
EP075B: Polynuclear Aromatic Hydrocarbons	EM1820073--030	Anonymous	Benzo(a)pyrene	50-32-8	28.5 %	0% - 20%	RPD exceeds LOR based limits

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural CPT_QC304_071218	----	----	----	19-Dec-2018	07-Dec-2018	12

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	1	20	5.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	20	0.00	5.00	NEPM 2013 B3 & ALS QC Standard



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA001: pH in soil using 0.01M CaCl extract								
Soil Glass Jar - Unpreserved (EA001) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	14-Dec-2018	14-Dec-2018	✓	14-Dec-2018	14-Dec-2018	✓
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	----	----	----	13-Dec-2018	21-Dec-2018	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	17-Dec-2018	05-Jun-2019	✓	17-Dec-2018	05-Jun-2019	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	17-Dec-2018	04-Jan-2019	✓	18-Dec-2018	04-Jan-2019	✓
EG048: Hexavalent Chromium (Alkaline Digest)								
Soil Glass Jar - Unpreserved (EG048G) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	18-Dec-2018	04-Jan-2019	✓	18-Dec-2018	25-Dec-2018	✓
EK026SF: Total CN by Segmented Flow Analyser								
Soil Glass Jar - Unpreserved (EK026SF) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	18-Dec-2018	21-Dec-2018	✓	19-Dec-2018	01-Jan-2019	✓
EK040T: Fluoride Total								
Soil Glass Jar - Unpreserved (EK040T) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	14-Dec-2018	04-Jan-2019	✓	17-Dec-2018	04-Jan-2019	✓
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066-EM) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	14-Dec-2018	21-Dec-2018	✓	18-Dec-2018	23-Jan-2019	✓



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2,	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	13-Dec-2018	14-Dec-2018	✓	14-Dec-2018	14-Dec-2018	✓
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2,	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	13-Dec-2018	14-Dec-2018	✓	14-Dec-2018	14-Dec-2018	✓
EP074I: Volatile Halogenated Compounds								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2,	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	13-Dec-2018	14-Dec-2018	✓	14-Dec-2018	14-Dec-2018	✓
EP075A: Phenolic Compounds (Halogenated)								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2,	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	14-Dec-2018	21-Dec-2018	✓	18-Dec-2018	23-Jan-2019	✓
EP075A: Phenolic Compounds (Non-halogenated)								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2,	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	14-Dec-2018	21-Dec-2018	✓	18-Dec-2018	23-Jan-2019	✓
EP075B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2,	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	14-Dec-2018	21-Dec-2018	✓	18-Dec-2018	23-Jan-2019	✓
EP075I: Organochlorine Pesticides								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2,	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	14-Dec-2018	21-Dec-2018	✓	18-Dec-2018	23-Jan-2019	✓
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2,	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	13-Dec-2018	14-Dec-2018	✓	14-Dec-2018	14-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP071-EM) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2,	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	14-Dec-2018	21-Dec-2018	✓	18-Dec-2018	23-Jan-2019	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2,	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	13-Dec-2018	14-Dec-2018	✓	14-Dec-2018	14-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP071-EM) CPT_MW12_071218_0.2, CPT_MW13_071218_0.2,	CPT_MW12_071218_0.5, CPT_MW13_071218_0.5	07-Dec-2018	14-Dec-2018	21-Dec-2018	✓	18-Dec-2018	23-Jan-2019	✓



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) CPT_QC304_071218	07-Dec-2018	----	----	----	19-Dec-2018	07-Dec-2018	✖
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F) CPT_QC304_071218	07-Dec-2018	----	----	----	19-Dec-2018	05-Jun-2019	✔
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) CPT_QC304_071218	07-Dec-2018	----	----	----	19-Dec-2018	04-Jan-2019	✔
EG050F: Dissolved Hexavalent Chromium							
Opaque plastic bottle - NaOH (EG050F) CPT_QC304_071218	07-Dec-2018	----	----	----	19-Dec-2018	04-Jan-2019	✔
EK026SF: Total CN by Segmented Flow Analyser							
Opaque plastic bottle - NaOH (EK026SF) CPT_QC304_071218	07-Dec-2018	----	----	----	16-Dec-2018	21-Dec-2018	✔
EK040P: Fluoride by PC Titrator							
Clear Plastic Bottle - Natural (EK040P) CPT_QC304_071218	07-Dec-2018	----	----	----	19-Dec-2018	04-Jan-2019	✔
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066) CPT_QC304_071218	07-Dec-2018	14-Dec-2018	14-Dec-2018	✔	18-Dec-2018	23-Jan-2019	✔
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC304_071218	07-Dec-2018	17-Dec-2018	21-Dec-2018	✔	17-Dec-2018	21-Dec-2018	✔
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC304_071218	07-Dec-2018	17-Dec-2018	21-Dec-2018	✔	17-Dec-2018	21-Dec-2018	✔
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC304_071218	07-Dec-2018	17-Dec-2018	21-Dec-2018	✔	17-Dec-2018	21-Dec-2018	✔
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC304_071218	07-Dec-2018	17-Dec-2018	21-Dec-2018	✔	17-Dec-2018	21-Dec-2018	✔
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) CPT_QC304_071218	07-Dec-2018	14-Dec-2018	14-Dec-2018	✔	18-Dec-2018	23-Jan-2019	✔
EP075A: Phenolic Compounds (Halogenated)							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC304_071218	07-Dec-2018	14-Dec-2018	14-Dec-2018	✔	17-Dec-2018	23-Jan-2019	✔



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075A: Phenolic Compounds (Non-halogenated)							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC304_071218	07-Dec-2018	14-Dec-2018	14-Dec-2018	✓	17-Dec-2018	23-Jan-2019	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC304_071218	07-Dec-2018	14-Dec-2018	14-Dec-2018	✓	17-Dec-2018	23-Jan-2019	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) CPT_QC304_071218	07-Dec-2018	14-Dec-2018	14-Dec-2018	✓	18-Dec-2018	23-Jan-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC304_071218, CPT_QC404_071218, CPT_QC508_071218	07-Dec-2018	17-Dec-2018	21-Dec-2018	✓	17-Dec-2018	21-Dec-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) CPT_QC304_071218	07-Dec-2018	14-Dec-2018	14-Dec-2018	✓	18-Dec-2018	23-Jan-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC304_071218, CPT_QC404_071218, CPT_QC508_071218	07-Dec-2018	17-Dec-2018	21-Dec-2018	✓	17-Dec-2018	21-Dec-2018	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC304_071218, CPT_QC404_071218, CPT_QC508_071218	07-Dec-2018	17-Dec-2018	21-Dec-2018	✓	17-Dec-2018	21-Dec-2018	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: **✖** = Quality Control frequency not within specification ; **✓** = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **SOIL** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Matrix Spikes (MS) - Continued							
Total Fluoride	EK040T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	1	4	25.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	1	100.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	1	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	0	1	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	20	5.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	8	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	4	25.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	8	12.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	4	25.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	1	100.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	1	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	0	1	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	20	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001	SOIL	In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3)
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	SOIL	In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3)
Total Fluoride	EK040T	SOIL	(In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
PCB - VIC EPA 448.3 Screen	EP066-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
TRH - Semivolatile Fraction	EP071-EM	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
Volatile Organic Compounds - Ultra-trace	EP074-UT	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)



Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds - Ultra-trace - Summations	EP074-UT-SUM	SOIL	Summation of MAHs and VHCs
Semivolatile Organic Compounds - Waste Classification	EP075-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502)
SVOC - Waste Classification (Sums)	EP075-EM-SUM	SOIL	Summations for EP075 (EM variation)
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Metals by ICP-MS - Suite B	EG020B-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium - Dissolved	EG050F	WATER	In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	WATER	In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Semivolatile Organic Compounds - Waste Classification	EP075-EM	WATER	In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH.
pH in soil using a 0.01M CaCl2 extract	EA001-PR	SOIL	In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
Total Fluoride	EK040T-PR	SOIL	In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Methanolic Extraction of Soils - Ultra-trace.	ORG16-UT	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids - VIC EPA Screen	ORG17-EM	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Separatory Funnel Extraction of Liquids	ORG14-EM	WATER	In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container.



Preparation Methods	Method	Matrix	Method Descriptions
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

Aina
4:25
(ALS)
18/12

ANZ
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER:		Destination Laboratory									
PROJECT MANAGER (PW):		SITE: Crib Point to Pakenham		MOBILE:		ALS:									
PROJECT NUMBER & TASK CODE:		P.O. NO.:		EMAIL REPORT TO:											
RESULTS REQUIRED (Date):		QUOTE N° EN/086/18		ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)											
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: COOLER (SEAL (Crib Point to Pakenham)) Mark: Yes No: NA SAMPLE TEMPERATURE CHILLED: Yes No:				CONTAINER INFORMATION Type / Code Total bottles				Notes: e.g. Highly contaminated sample e.g. "High PAHs expected" Extra volume for QC or trace LORs etc.							
SAMPLE INFORMATION (note: S = Soil, V = Vial)		MATRIX		DATE		Time		Type / Code		Total bottles		HOLD			
ALS ID	SAMPLE ID														
1	CPT MW07-181219-0.2	S		0830		0830				15.18		X			
2	CPT MW07-181219-0.5			0835		0835						X			
3	CPT MW07-191219-1.0			0840		0840						X			
4	CPT MW07-191219-2.0			0845		0845						X			
5	CPT MW07-191219-3.4			0850		0850						X			
6	CPT MW07-191219-4.0			0855		0855						X			
7	CPT MW23-181219-0.2			1115		1115						X			
8	CPT MW23-181219-0.5			1120		1120						X			
9	CPT MW23-181219-1.0			1125		1125						X			
10	CPT MW23-181219-2.0			1130		1130						X			
11	CPT MW23-181219-3.0			1135		1135						X			
12	CPT MW23-181219-4.0			1140		1140						X			
13	CPT QC306-181219-1.0	W										X			
14	CPT QC406-181219-1.0	W										X			
15	CPT QC510-181219-1.0	W										X			
	CPT														
	CPT														
	CPT														
	CPT														
	CPT														
	CPT														
RELINQUISHED BY:				RECEIVED BY:				RECEIVED BY:				METHOD OF SHIPMENT:			
Name Sebastian McCulloch				Date: 18/12/18				Name:				Cor' Note No:			
Of: AECOM				Time: 1630				Of:				Transport Co:			

Please freeze for Acid sulfate
THT for Qc 509 and Qc 510 expires on Thursday please extract.

ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER:		Destination Laboratory	
PROJECT MANAGER (PM):		SITE: Crib Point to Pakenham		MOBILE:		ACLS	
PROJECT NUMBER & TASK CODE:		P.O. NO.:		EMAIL REPORT TO:			
RESULTS REQUIRED (Date):		QUOTE IN EN1096/18		ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)		Notes: e.g. Highly contaminated sample e.g. "High PAHs expected" Extra volume for QC or trace LORs etc.	
FOR LABORATORY USE ONLY		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		TRK (LC-CG) TWH/SFE			
COOLER SEAL (Check, No, N/A)							
SAMPLE TEMPERATURE							
CHILLED: YES / NO							
SAMPLE INFORMATION (note: S = Soil, W=Water)		CONTAINER INFORMATION					
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
16	CPT MW21-171218-0.2	S				15	
17	CPT MW21-171218-0.5						
18	CPT MW21-171218-1.0						
19	CPT MW21-171218-2.0						
20	CPT MW21-171218-3.0						
21	CPT MW21-171218-4.0						
22	CPT MW09-171219-0.2						
23	CPT MW09-171219-0.5						
24	CPT MW09-171219-1.0 *						
25	CPT MW09-171219-2.0						
26	CPT MW09-171219-3.0						
27	CPT MW09-171219-4.0						
28	CPT QC 305-171218					9B	
29	CPT QC 405-171218					10	
30	CPT GC 509-171218					20	
	CPT						
	CPT						
	CPT						
	CPT						
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT	
Name Sebastian McCulloch	Date: 18.12.19	Name:	Date:	Name:	Date:	Con' Note No:	
Of: AECOM	Time: 1630	Of:	Time:	Of:	Time:	Transport Co:	
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Plastic; HS = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. Soil Container Codes: Jar = Unpreserved glass jar							

COC Page of

THT for ACS09 & ACS10 runs out on Thursday, please extract

From: [REDACTED]@aecom.com>
Sent: Wednesday, 19 December 2018 2:16 PM
To: [REDACTED]
Subject: RE: Crib Point

Hi [REDACTED]

Please analyse:

1. 16 CPT_MW21_171218_0.2 = IWRG621
2. 19 CPT_MW21_171218_2.0 = IWRG621
3. 17 CPT_MW21_171218_0.5 = Chromium Reduced Sulfur
4. 20 CPT_MW21_171218_3.0 = Chromium Reduced Sulfur
5. 22 CPT_MW09_171218_0.2 = IWRG621
6. 23 CPT_MW09_171218_0.5 = IWRG621
7. 23 CPT_MW09_171218_0.5 = Chromium Reduced Sulfur
8. 24 CPT_MW09_171218_3.0 = Chromium Reduced Sulfur
9. 25 QC305_171218 = IWRG621 water equivalent
10. 29 QC405_171218 = TPH(C6-C9)/BTEXN
11. 30 QC509_171218 = TPH(C6-C9)/BTEXN

12. 1 CPT_MW07_181218_0.2 = IWRG621
13. 2 CPT_MW07_181218_0.5 = IWRG621
14. 3 CPT_MW07_181218_1.0 = Chromium Reduced Sulfur
15. 6 CPT_MW07_181218_4.0 = Chromium Reduced Sulfur
16. 7 CPT_MW23_181218_0.2 = IWRG621
17. 8 CPT_MW23_181218_0.5 = IWRG621
18. 9 CPT_MW23_181218_1.0 = Chromium Reduced Sulfur
19. 11 CPT_MW23_181218_3.0 = Chromium Reduced Sulfur
20. 13 QC306_181218 = IWRG621 water equivalent
21. 14 QC406_171218 = TPH(C6-C9)/BTEXN
22. 15 QC510_171218 = TPH(C6-C9)/BTEXN

At standard TAT. Thanks.

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
<http://www.aecom.com>

Built to deliver a better world

-----Original Message-----

From: [REDACTED]@alsglobal.com]
Sent: Wednesday, 19 December 2018 11:18 AM
To: [REDACTED]
Subject: Crib Point

Hi [REDACTED]

Please find attached samples on hold

Thanks

Regards

CERTIFICATE OF ANALYSIS

Work Order : **EM1820497**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60582811
Order number :
C-O-C number : ----
Sampler : SMcC
Site : Crib Point to Pakenham
Quote number : EN/096/18
No. of samples received : 30
No. of samples analysed : 21

Page : 1 of 25
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 18-Dec-2018 16:25
Date Analysis Commenced : 20-Dec-2018
Issue Date : 07-Jan-2019 15:16



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
[REDACTED]	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
[REDACTED]	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
[REDACTED]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW07_181218_ 0.2	CPT_MW07_181218_ 0.5	CPT_MW07_181218_ 1.0	CPT_MW07_181218_ 4.0	CPT_MW23_181218_ 0.2
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-001	EM1820497-002	EM1820497-003	EM1820497-006	EM1820497-007
				Result	Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit		4.8	5.2	----	----	4.6
EA026 : Chromium Reducible Sulfur									
Chromium Reducible Sulphur	----	0.005	%		----	----	<0.005	<0.005	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		10.3	6.7	----	----	14.3
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	----	----	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	----	----	<1
Copper	7440-50-8	5	mg/kg		<5	<5	----	----	<5
Lead	7439-92-1	5	mg/kg		25	5	----	----	36
Molybdenum	7439-98-7	2	mg/kg		<2	<2	----	----	<2
Nickel	7440-02-0	2	mg/kg		<2	<2	----	----	<2
Selenium	7782-49-2	5	mg/kg		<5	<5	----	----	<5
Silver	7440-22-4	2	mg/kg		<2	<2	----	----	<2
Tin	7440-31-5	5	mg/kg		<5	<5	----	----	<5
Zinc	7440-66-6	5	mg/kg		12	<5	----	----	33
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	----	----	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg		<1	<1	----	----	1
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg		90	<40	----	----	<40
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	----	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Styrene	100-42-5	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	----	<0.5



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW07_181218_ 0.2	CPT_MW07_181218_ 0.5	CPT_MW07_181218_ 1.0	CPT_MW07_181218_ 4.0	CPT_MW23_181218_ 0.2
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-001	EM1820497-002	EM1820497-003	EM1820497-006	EM1820497-007
					Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	<1
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.1-Dichloroethene	75-35-4	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
Methylene chloride	75-09-2	0.4	mg/kg		<0.4	<0.4	----	----	<0.4
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
Chloroform	67-66-3	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
1.2-Dichloroethane	107-06-2	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
Trichloroethene	79-01-6	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg		<0.04	<0.04	----	----	<0.04
Tetrachloroethene	127-18-4	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		<0.02	<0.02	----	----	<0.02
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	<0.01	----	----	<0.01
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
2.6-Dichlorophenol	87-65-0	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		<0.05	<0.05	----	----	<0.05



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW07_181218_ 0.2	CPT_MW07_181218_ 0.5	CPT_MW07_181218_ 1.0	CPT_MW07_181218_ 4.0	CPT_MW23_181218_ 0.2
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-001	EM1820497-002	EM1820497-003	EM1820497-006	EM1820497-007
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Halogenated) - Continued									
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Pentachlorophenol	87-86-5	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
^ Sum of Phenols (halogenated)	----	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		<1	<1	----	----	<1
2-Methylphenol	95-48-7	1	mg/kg		<1	<1	----	----	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	----	----	<1
2-Nitrophenol	88-75-5	1	mg/kg		<1	<1	----	----	<1
2,4-Dimethylphenol	105-67-9	1	mg/kg		<1	<1	----	----	<1
2,4-Dinitrophenol	51-28-5	5	mg/kg		<5	<5	----	----	<5
4-Nitrophenol	100-02-7	5	mg/kg		<5	<5	----	----	<5
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg		<5	<5	----	----	<5
Dinoseb	88-85-7	5	mg/kg		<5	<5	----	----	<5
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg		<5	<5	----	----	<5
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		<1	<1	----	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	----	<0.5



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW07_181218_ 0.2	CPT_MW07_181218_ 0.5	CPT_MW07_181218_ 1.0	CPT_MW07_181218_ 4.0	CPT_MW23_181218_ 0.2
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-001	EM1820497-002	EM1820497-003	EM1820497-006	EM1820497-007
					Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	----	----	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	----	----	1.2
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
gamma-BHC	58-89-9	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Aldrin	309-00-2	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
4,4'-DDE	72-55-9	0.05	mg/kg		0.08	<0.05	----	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Endrin	72-20-8	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
4,4'-DDT	50-29-3	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Methoxychlor	72-43-5	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
^ Sum of organochlorine pesticides	----	0.03	mg/kg		0.08	<0.03	----	----	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		0.08	<0.05	----	----	<0.05
^ Chlordane	57-74-9	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		<0.03	<0.03	----	----	<0.03
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	----	<50



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW07_181218_ 0.2	CPT_MW07_181218_ 0.5	CPT_MW07_181218_ 1.0	CPT_MW07_181218_ 4.0	CPT_MW23_181218_ 0.2
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-001	EM1820497-002	EM1820497-003	EM1820497-006	EM1820497-007
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	----	<10
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	----	----	<50
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	----	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	----	<10
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		122	100	----	----	116
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		90.1	89.1	----	----	81.0
Toluene-D8	2037-26-5	0.1	%		86.2	86.9	----	----	78.4
4-Bromofluorobenzene	460-00-4	0.1	%		94.7	97.2	----	----	87.2
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		86.4	101	----	----	81.0
2-Chlorophenol-D4	93951-73-6	0.025	%		67.6	77.2	----	----	79.8
2,4,6-Tribromophenol	118-79-6	0.025	%		80.3	80.2	----	----	84.8
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		79.0	87.4	----	----	79.0
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%		73.9	77.3	----	----	75.1
2-Fluorobiphenyl	321-60-8	0.025	%		86.0	90.8	----	----	83.0
Anthracene-d10	1719-06-8	0.025	%		86.5	90.7	----	----	79.5
4-Terphenyl-d14	1718-51-0	0.025	%		81.2	83.7	----	----	76.3



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW23_181218_ 0.5	CPT_MW23_181218_ 1.0	CPT_MW23_181218_ 3.0	CPT_MW21_171218_ 0.2	CPT_MW21_171218_ 0.5
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-008	EM1820497-009	EM1820497-011	EM1820497-016	EM1820497-017
				Result	Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl ₂)	----	0.1	pH Unit		7.2	----	----	4.9	----
EA026 : Chromium Reducible Sulfur									
Chromium Reducible Sulphur	----	0.005	%		----	<0.005	<0.005	----	0.006
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		6.0	----	----	26.0	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	----	----	<5	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	<1	----
Copper	7440-50-8	5	mg/kg		<5	----	----	<5	----
Lead	7439-92-1	5	mg/kg		<5	----	----	12	----
Molybdenum	7439-98-7	2	mg/kg		<2	----	----	<2	----
Nickel	7440-02-0	2	mg/kg		<2	----	----	4	----
Selenium	7782-49-2	5	mg/kg		<5	----	----	<5	----
Silver	7440-22-4	2	mg/kg		<2	----	----	<2	----
Tin	7440-31-5	5	mg/kg		<5	----	----	<5	----
Zinc	7440-66-6	5	mg/kg		9	----	----	6	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	<0.1	----
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<0.5	----	----	<0.5	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg		<1	----	----	1	----
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg		<40	----	----	110	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	----	<0.1	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Styrene	100-42-5	0.5	mg/kg		<0.5	----	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	<0.5	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW23_181218_0.5	CPT_MW23_181218_1.0	CPT_MW23_181218_3.0	CPT_MW21_171218_0.2	CPT_MW21_171218_0.5
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-008	EM1820497-009	EM1820497-011	EM1820497-016	EM1820497-017
					Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg		<0.2	----	----	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	----	----	<1	----
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		<0.02	----	----	<0.02	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg		<0.01	----	----	<0.01	----
Methylene chloride	75-09-2	0.4	mg/kg		<0.4	----	----	<0.4	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg		<0.02	----	----	<0.02	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg		<0.01	----	----	<0.01	----
Chloroform	67-66-3	0.02	mg/kg		<0.02	----	----	<0.02	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg		<0.01	----	----	<0.01	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg		<0.01	----	----	<0.01	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg		<0.02	----	----	<0.02	----
Trichloroethene	79-01-6	0.02	mg/kg		<0.02	----	----	<0.02	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg		<0.04	----	----	<0.04	----
Tetrachloroethene	127-18-4	0.02	mg/kg		<0.02	----	----	<0.02	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg		<0.01	----	----	<0.01	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg		<0.02	----	----	<0.02	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg		<0.02	----	----	<0.02	----
Chlorobenzene	108-90-7	0.02	mg/kg		<0.02	----	----	<0.02	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		<0.02	----	----	<0.02	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		<0.02	----	----	<0.02	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		<0.01	----	----	<0.01	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	----	----	<0.01	----
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	----	----	<0.01	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		<0.03	----	----	<0.03	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		<0.03	----	----	<0.03	----
2.6-Dichlorophenol	87-65-0	0.03	mg/kg		<0.03	----	----	<0.03	----
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg		<0.03	----	----	<0.03	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		<0.05	----	----	<0.05	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		<0.05	----	----	<0.05	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW23_181218_ 0.5	CPT_MW23_181218_ 1.0	CPT_MW23_181218_ 3.0	CPT_MW21_171218_ 0.2	CPT_MW21_171218_ 0.5
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-008	EM1820497-009	EM1820497-011	EM1820497-016	EM1820497-017
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Halogenated) - Continued									
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg		<0.03	----	----	<0.03	----
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg		<0.05	----	----	<0.05	----
Pentachlorophenol	87-86-5	0.2	mg/kg		<0.2	----	----	<0.2	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg		<0.03	----	----	<0.03	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		<1	----	----	<1	----
2-Methylphenol	95-48-7	1	mg/kg		<1	----	----	<1	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	----	<1	----
2-Nitrophenol	88-75-5	1	mg/kg		<1	----	----	<1	----
2,4-Dimethylphenol	105-67-9	1	mg/kg		<1	----	----	<1	----
2,4-Dinitrophenol	51-28-5	5	mg/kg		<5	----	----	<5	----
4-Nitrophenol	100-02-7	5	mg/kg		<5	----	----	<5	----
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg		<5	----	----	<5	----
Dinoseb	88-85-7	5	mg/kg		<5	----	----	<5	----
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg		<5	----	----	<5	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		<1	----	----	<1	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	<0.5	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	<0.5	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg		<0.5	----	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	<0.5	----
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	<0.5	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	<0.5	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	<0.5	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW23_181218_ 0.5	CPT_MW23_181218_ 1.0	CPT_MW23_181218_ 3.0	CPT_MW21_171218_ 0.2	CPT_MW21_171218_ 0.5
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-008	EM1820497-009	EM1820497-011	EM1820497-016	EM1820497-017
					Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	----	----	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	----	----	1.2	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		<0.03	----	----	<0.03	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		<0.03	----	----	<0.03	----
beta-BHC	319-85-7	0.03	mg/kg		<0.03	----	----	<0.03	----
gamma-BHC	58-89-9	0.03	mg/kg		<0.03	----	----	<0.03	----
delta-BHC	319-86-8	0.03	mg/kg		<0.03	----	----	<0.03	----
Heptachlor	76-44-8	0.03	mg/kg		<0.03	----	----	<0.03	----
Aldrin	309-00-2	0.03	mg/kg		<0.03	----	----	<0.03	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg		<0.03	----	----	<0.03	----
cis-Chlordane	5103-71-9	0.03	mg/kg		<0.03	----	----	<0.03	----
trans-Chlordane	5103-74-2	0.03	mg/kg		<0.03	----	----	<0.03	----
Endosulfan 1	959-98-8	0.03	mg/kg		<0.03	----	----	<0.03	----
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	<0.05	----
Dieldrin	60-57-1	0.03	mg/kg		<0.03	----	----	<0.03	----
Endrin aldehyde	7421-93-4	0.03	mg/kg		<0.03	----	----	<0.03	----
Endrin	72-20-8	0.03	mg/kg		<0.03	----	----	<0.03	----
Endosulfan 2	33213-65-9	0.03	mg/kg		<0.03	----	----	<0.03	----
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg		<0.03	----	----	<0.03	----
4,4'-DDT	50-29-3	0.05	mg/kg		<0.05	----	----	<0.05	----
Methoxychlor	72-43-5	0.03	mg/kg		<0.03	----	----	<0.03	----
^ Sum of organochlorine pesticides	----	0.03	mg/kg		<0.03	----	----	<0.03	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		<0.03	----	----	<0.03	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	<0.05	----
^ Chlordane	57-74-9	0.03	mg/kg		<0.03	----	----	<0.03	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		<0.03	----	----	<0.03	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	<50	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW23_181218_ 0.5	CPT_MW23_181218_ 1.0	CPT_MW23_181218_ 3.0	CPT_MW21_171218_ 0.2	CPT_MW21_171218_ 0.5
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-008	EM1820497-009	EM1820497-011	EM1820497-016	EM1820497-017
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	<10	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	<100	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	140	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	140	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	150	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	150	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	<50	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	<10	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		107	----	----	99.0	----
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		96.4	----	----	77.3	----
Toluene-D8	2037-26-5	0.1	%		92.9	----	----	75.0	----
4-Bromofluorobenzene	460-00-4	0.1	%		102	----	----	83.1	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		92.0	----	----	76.3	----
2-Chlorophenol-D4	93951-73-6	0.025	%		91.4	----	----	75.3	----
2,4,6-Tribromophenol	118-79-6	0.025	%		92.9	----	----	91.3	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		95.1	----	----	85.3	----
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%		92.7	----	----	80.7	----
2-Fluorobiphenyl	321-60-8	0.025	%		97.1	----	----	89.2	----
Anthracene-d10	1719-06-8	0.025	%		91.3	----	----	84.5	----
4-Terphenyl-d14	1718-51-0	0.025	%		85.9	----	----	81.7	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW21_171218_2.0	CPT_MW21_171218_3.0	CPT_MW09_171218_0.2	CPT_MW09_171218_0.5	CPT_MW09_171218_3.0
Client sampling date / time					17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-019	EM1820497-020	EM1820497-022	EM1820497-023	EM1820497-026
				Result	Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit		6.5	----	4.7	6.8	----
EA026 : Chromium Reducible Sulfur									
Chromium Reducible Sulphur	----	0.005	%		----	<0.005	----	<0.005	0.168
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		21.8	----	20.3	17.8	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	----	<5	16	----
Cadmium	7440-43-9	1	mg/kg		<1	----	<1	<1	----
Copper	7440-50-8	5	mg/kg		<5	----	<5	<5	----
Lead	7439-92-1	5	mg/kg		10	----	8	9	----
Molybdenum	7439-98-7	2	mg/kg		<2	----	4	<2	----
Nickel	7440-02-0	2	mg/kg		4	----	4	8	----
Selenium	7782-49-2	5	mg/kg		<5	----	<5	<5	----
Silver	7440-22-4	2	mg/kg		<2	----	<2	<2	----
Tin	7440-31-5	5	mg/kg		<5	----	<5	<5	----
Zinc	7440-66-6	5	mg/kg		<5	----	7	<5	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	<0.1	<0.1	----
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg		<1	----	1	<1	----
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg		160	----	80	190	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	<0.1	<0.1	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Styrene	100-42-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW21_171218_ 2.0	CPT_MW21_171218_ 3.0	CPT_MW09_171218_ 0.2	CPT_MW09_171218_ 0.5	CPT_MW09_171218_ 3.0
Client sampling date / time					17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-019	EM1820497-020	EM1820497-022	EM1820497-023	EM1820497-026
					Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg		<0.2	----	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	<1	----
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg		<0.02	----	<0.02	<0.02	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg		<0.01	----	<0.01	<0.01	----
Methylene chloride	75-09-2	0.4	mg/kg		<0.4	----	<0.4	<0.4	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg		<0.02	----	<0.02	<0.02	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg		<0.01	----	<0.01	<0.01	----
Chloroform	67-66-3	0.02	mg/kg		<0.02	----	<0.02	<0.02	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg		<0.01	----	<0.01	<0.01	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg		<0.01	----	<0.01	<0.01	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg		<0.02	----	<0.02	<0.02	----
Trichloroethene	79-01-6	0.02	mg/kg		<0.02	----	<0.02	<0.02	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg		<0.04	----	<0.04	<0.04	----
Tetrachloroethene	127-18-4	0.02	mg/kg		<0.02	----	<0.02	<0.02	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg		<0.01	----	<0.01	<0.01	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg		<0.02	----	<0.02	<0.02	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg		<0.02	----	<0.02	<0.02	----
Chlorobenzene	108-90-7	0.02	mg/kg		<0.02	----	<0.02	<0.02	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg		<0.02	----	<0.02	<0.02	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg		<0.02	----	<0.02	<0.02	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg		<0.01	----	<0.01	<0.01	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	----	<0.01	<0.01	----
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg		<0.01	----	<0.01	<0.01	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
2.6-Dichlorophenol	87-65-0	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg		<0.05	----	<0.05	<0.05	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg		<0.05	----	<0.05	<0.05	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW21_171218_ 2.0	CPT_MW21_171218_ 3.0	CPT_MW09_171218_ 0.2	CPT_MW09_171218_ 0.5	CPT_MW09_171218_ 3.0
Client sampling date / time					17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-019	EM1820497-020	EM1820497-022	EM1820497-023	EM1820497-026
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Halogenated) - Continued									
2,3,5,6-Tetrachlorophenol	935-95-5	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg		<0.05	----	<0.05	<0.05	----
Pentachlorophenol	87-86-5	0.2	mg/kg		<0.2	----	<0.2	<0.2	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg		<1	----	<1	<1	----
2-Methylphenol	95-48-7	1	mg/kg		<1	----	<1	<1	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	<1	<1	----
2-Nitrophenol	88-75-5	1	mg/kg		<1	----	<1	<1	----
2,4-Dimethylphenol	105-67-9	1	mg/kg		<1	----	<1	<1	----
2,4-Dinitrophenol	51-28-5	5	mg/kg		<5	----	<5	<5	----
4-Nitrophenol	100-02-7	5	mg/kg		<5	----	<5	<5	----
2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg		<5	----	<5	<5	----
Dinoseb	88-85-7	5	mg/kg		<5	----	<5	<5	----
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg		<5	----	<5	<5	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg		<1	----	<1	<1	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW21_171218_ 2.0	CPT_MW21_171218_ 3.0	CPT_MW09_171218_ 0.2	CPT_MW09_171218_ 0.5	CPT_MW09_171218_ 3.0
Client sampling date / time					17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-019	EM1820497-020	EM1820497-022	EM1820497-023	EM1820497-026
					Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	----	0.6	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	----	1.2	1.2	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
beta-BHC	319-85-7	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
gamma-BHC	58-89-9	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
delta-BHC	319-86-8	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
Heptachlor	76-44-8	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
Aldrin	309-00-2	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
cis-Chlordane	5103-71-9	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
trans-Chlordane	5103-74-2	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
Endosulfan 1	959-98-8	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	----	<0.05	<0.05	----
Dieldrin	60-57-1	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
Endrin aldehyde	7421-93-4	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
Endrin	72-20-8	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
Endosulfan 2	33213-65-9	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	----	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
4,4'-DDT	50-29-3	0.05	mg/kg		<0.05	----	<0.05	<0.05	----
Methoxychlor	72-43-5	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
^ Sum of organochlorine pesticides	----	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	<0.05	<0.05	----
^ Chlordane	57-74-9	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg		<0.03	----	<0.03	<0.03	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	<50	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW21_171218_2.0	CPT_MW21_171218_3.0	CPT_MW09_171218_0.2	CPT_MW09_171218_0.5	CPT_MW09_171218_3.0
Client sampling date / time					17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-019	EM1820497-020	EM1820497-022	EM1820497-023	EM1820497-026
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	<10	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	160	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	160	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	180	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	180	<50	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	<50	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	<10	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		104	----	101	115	----
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		86.1	----	76.6	79.6	----
Toluene-D8	2037-26-5	0.1	%		84.4	----	73.8	76.9	----
4-Bromofluorobenzene	460-00-4	0.1	%		93.3	----	83.7	84.9	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%		103	----	91.9	83.2	----
2-Chlorophenol-D4	93951-73-6	0.025	%		102	----	92.2	83.2	----
2,4,6-Tribromophenol	118-79-6	0.025	%		96.4	----	104	91.1	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.025	%		98.1	----	92.7	82.1	----
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%		93.7	----	92.7	81.7	----
2-Fluorobiphenyl	321-60-8	0.025	%		103	----	98.2	88.0	----
Anthracene-d10	1719-06-8	0.025	%		98.0	----	91.6	82.5	----
4-Terphenyl-d14	1718-51-0	0.025	%		91.4	----	93.5	81.4	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC306_181218	CPT_QC406_181218	CPT_QC510_181218	CPT_QC305_171218	CPT_QC405_171218
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-013	EM1820497-014	EM1820497-015	EM1820497-028	EM1820497-029
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.12	----	----	7.09	----
EG020F: Dissolved Metals by ICP-MS									
Silver	7440-22-4	0.001	mg/L		<0.001	----	----	<0.001	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	<0.0001	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	<0.001	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	<0.001	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	<0.001	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	<0.001	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	<0.01	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	<0.001	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	<0.005	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	<0.0001	----
EG050F: Dissolved Hexavalent Chromium									
Hexavalent Chromium	18540-29-9	0.01	mg/L		<0.01	----	----	<0.01	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	0.004	mg/L		<0.004	----	----	<0.004	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		<0.1	----	----	<0.1	----
EP066: Polychlorinated Biphenyls (PCB)									
^ Total Polychlorinated biphenyls	----	1	µg/L		<1	----	----	<1	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	5	µg/L		<5	----	----	<5	----
EP074E: Halogenated Aliphatic Compounds									
Vinyl chloride	75-01-4	50	µg/L		<50	----	----	<50	----
1,1-Dichloroethene	75-35-4	5	µg/L		<5	----	----	<5	----
Methylene chloride	75-09-2	5	µg/L		<5	----	----	<5	----
trans-1,2-Dichloroethene	156-60-5	5	µg/L		<5	----	----	<5	----
cis-1,2-Dichloroethene	156-59-2	5	µg/L		<5	----	----	<5	----
1,1,1-Trichloroethane	71-55-6	5	µg/L		<5	----	----	<5	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	----	----	<5	----
1,2-Dichloroethane	107-06-2	5	µg/L		<5	----	----	<5	----
Trichloroethene	79-01-6	5	µg/L		<5	----	----	<5	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC306_181218	CPT_QC406_181218	CPT_QC510_181218	CPT_QC305_171218	CPT_QC405_171218
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-013	EM1820497-014	EM1820497-015	EM1820497-028	EM1820497-029
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	----	----	<5	----
Tetrachloroethene	127-18-4	5	µg/L		<5	----	----	<5	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	----	----	<5	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	----	----	<5	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	----	----	<5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	----	----	<5	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	----	----	<5	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	----	----	<5	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	----	----	<5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	----	----	<5	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	<1.0	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	<1.0	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	<1.0	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	<1.0	----
Benzo(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	<1.0	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	<1.0	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.6	----	----	<0.5	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	2	µg/L		<2	----	----	<2	----
2,4-Dichlorophenol	120-83-2	2	µg/L		<2	----	----	<2	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC306_181218	CPT_QC406_181218	CPT_QC510_181218	CPT_QC305_171218	CPT_QC405_171218
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-013	EM1820497-014	EM1820497-015	EM1820497-028	EM1820497-029
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds (Halogenated) - Continued									
2,6-Dichlorophenol	87-65-0	2	µg/L		<2	----	----	<2	----
4-Chloro-3-methylphenol	59-50-7	4	µg/L		<4	----	----	<4	----
2,4,5-Trichlorophenol	95-95-4	2	µg/L		<2	----	----	<2	----
2,4,6-Trichlorophenol	88-06-2	2	µg/L		<2	----	----	<2	----
2,3,5,6-Tetrachlorophenol	935-95-5	2	µg/L		<2	----	----	<2	----
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	2	µg/L		<2	----	----	<2	----
Pentachlorophenol	87-86-5	2	µg/L		<2	----	----	<2	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	4	µg/L		<4	----	----	<4	----
2-Methylphenol	95-48-7	4	µg/L		<4	----	----	<4	----
3- & 4-Methylphenol	1319-77-3	4	µg/L		<4	----	----	<4	----
2-Nitrophenol	88-75-5	4	µg/L		<4	----	----	<4	----
2,4-Dimethylphenol	105-67-9	4	µg/L		<4	----	----	<4	----
2,4-Dinitrophenol	51-28-5	100	µg/L		<100	----	----	<100	----
4-Nitrophenol	100-02-7	50	µg/L		<50	----	----	<50	----
2-Methyl-4,6-dinitrophenol	8071-51-0	50	µg/L		<50	----	----	<50	----
Dinoseb	88-85-7	50	µg/L		<50	----	----	<50	----
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	50	µg/L		<50	----	----	<50	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	<0.5	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	<0.5	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	<0.5	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	<0.5	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	<0.5	----
4,4`-DDE	72-55-9	0.5	µg/L		<0.5	----	----	<0.5	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	<0.5	----
4,4`-DDD	72-54-8	0.5	µg/L		<0.5	----	----	<0.5	----
4,4`-DDT	50-29-3	0.5	µg/L		<0.5	----	----	<0.5	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	----	----	<50	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	<100	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	<50	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC306_181218	CPT_QC406_181218	CPT_QC510_181218	CPT_QC305_171218	CPT_QC405_171218
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-013	EM1820497-014	EM1820497-015	EM1820497-028	EM1820497-029
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	----	----	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	<100	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	<100	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	<100	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	<100	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		105	----	----	106	----
EP074S: VOC Surrogates									
1,2-Dichloroethane-D4	17060-07-0	5	%		112	----	----	117	----
Toluene-D8	2037-26-5	5	%		91.6	----	----	101	----
4-Bromofluorobenzene	460-00-4	5	%		96.6	----	----	108	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		27.4	----	----	21.4	----
2-Chlorophenol-D4	93951-73-6	1.0	%		74.5	----	----	62.0	----
2,4,6-Tribromophenol	118-79-6	1.0	%		56.5	----	----	55.8	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		84.3	----	----	72.7	----
Anthracene-d10	1719-06-8	1.0	%		86.8	----	----	85.7	----
4-Terphenyl-d14	1718-51-0	1.0	%		89.8	----	----	92.9	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC306_181218	CPT_QC406_181218	CPT_QC510_181218	CPT_QC305_171218	CPT_QC405_171218
Client sampling date / time					18-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820497-013	EM1820497-014	EM1820497-015	EM1820497-028	EM1820497-029
					Result	Result	Result	Result	Result
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.25	%		37.5	----	----	29.4	----
2-Chlorophenol-D4	93951-73-6	0.25	%		82.4	----	----	60.9	----
2,4,6-Tribromophenol	118-79-6	0.25	%		89.5	----	----	56.8	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.25	%		97.7	----	----	65.4	----
1,2-Dichlorobenzene-D4	2199-69-1	0.25	%		88.5	----	----	58.9	----
2-Fluorobiphenyl	321-60-8	0.25	%		106	----	----	69.6	----
Anthracene-d10	1719-06-8	0.25	%		97.6	----	----	67.2	----
4-Terphenyl-d14	1718-51-0	0.25	%		102	----	----	66.4	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		111	93.5	99.4	115	96.6
Toluene-D8	2037-26-5	2	%		90.4	93.6	98.4	99.6	93.1
4-Bromofluorobenzene	460-00-4	2	%		105	106	108	116	105



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC509_171218	----	----	----	----
				Client sampling date / time	17-Dec-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1820497-030	-----	-----	-----	-----
				Result	----	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ Total Xylenes	----	2	µg/L		<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		93.2	----	----	----	----
Toluene-D8	2037-26-5	2	%		89.3	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		103	----	----	----	----



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Sub-Matrix: SOIL		□□□□ □ □□ □ s □	
<i>Compound</i>	<i>CAS Number</i>	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1,2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	28	134
2-Chlorophenol-D4	93951-73-6	27	123
2,4,6-Tribromophenol	118-79-6	25	149
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	29	125
1,2-Dichlorobenzene-D4	2199-69-1	31	117
2-Fluorobiphenyl	321-60-8	44	136
Anthracene-d10	1719-06-8	53	133
4-Terphenyl-d14	1718-51-0	59	141

Sub-Matrix: WATER		□□□□ □ □□ □ s □	
<i>Compound</i>	<i>CAS Number</i>	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	125
EP074S: VOC Surrogates			
1,2-Dichloroethane-D4	17060-07-0	72	132
Toluene-D8	2037-26-5	77	132
4-Bromofluorobenzene	460-00-4	67	131
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	13	90
2-Chlorophenol-D4	93951-73-6	42	117
2,4,6-Tribromophenol	118-79-6	52	140
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	49	136

Sub-Matrix: WATER		□□□□ □□□ □ s □	
Compound	CAS Number	□□%	□□ □
EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued			
1,2-Dichlorobenzene-D4	2199-69-1	49	128
2-Fluorobiphenyl	321-60-8	57	137
Anthracene-d10	1719-06-8	67	137
4-Terphenyl-d14	1718-51-0	66	136
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

Work Order	: EM1820497	Page	: 1 of 14
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]		
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [REDACTED]	E-mail	: [REDACTED]@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60582811	Date Received	: 18-Dec-2018 16:25
Order number	: ----	Date Analysed	: 20-Dec-2018
C-O-C number	: ----	Date Issued	: 07-Jan-2019 15:17
No. of samples received	: 30		
No. of samples analysed	: 21	Quote number	: EN/096/18

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Client sample ID

Sub-Matrix: SOIL				Client sample ID		CPT_MW07_1 81218_0.2	CPT_MW07_1 81218_0.5	CPT_MW23_1 81218_0.2	CPT_MW23_1 81218_0.5	CPT_MW21_1 71218_0.2
				Sampling date/time						
Compound	Method	LOR	Unit			EM1820497-001	EM1820497-002	EM1820497-007	EM1820497-008	EM1820497-016
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	2	12.5	4.8	5.2	4.6	7.2	4.9
EG005T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	2000	<5	<5	<5	<5	<5
Cadmium	EG005T	1	mg/kg	----	400	<1	<1	<1	<1	<1
Copper	EG005T	5	mg/kg	----	20000	<5	<5	<5	<5	<5
Lead	EG005T	5	mg/kg	----	6000	25	5	36	<5	12
Molybdenum	EG005T	2	mg/kg	----	4000	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	12000	<2	<2	<2	<2	4
Selenium	EG005T	5	mg/kg	----	200	<5	<5	<5	<5	<5
Silver	EG005T	2	mg/kg	----	720	<2	<2	<2	<2	<2
Zinc	EG005T	5	mg/kg	----	140000	12	<5	33	9	6
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	300	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	10000	<1	<1	1	<1	1
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	40000	90	<40	<40	<40	110
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	16	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	240	<0.2	<0.2	<0.2	<0.2	<0.2
EP074I: Volatile Halogenated Compounds										
Vinyl chloride	EP074-UT	0.02	mg/kg	----	4.8	<0.02	<0.02	<0.02	<0.02	<0.02
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	11	<0.02	<0.02	<0.02	<0.02	<0.02
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	50	<0.01	<0.01	<0.01	<0.01	<0.01
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	320	<0.03	<0.03	<0.03	<0.03	<0.03
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	2200	<1	<1	<1	<1	<1
EP075B: Polynuclear Aromatic Hydrocarbons										



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

				Client sample ID			CPT_MW07_1 81218_0.2	CPT_MW07_1 81218_0.5	CPT_MW23_1 81218_0.2	CPT_MW23_1 81218_0.5	CPT_MW21_1 71218_0.2
				Sampling date/time	□ □ □ □ □ □	□ □ □ □ □ □	18-Dec-2018 15:00	18-Dec-2018 15:00	18-Dec-2018 15:00	18-Dec-2018 15:00	17-Dec-2018 15:00
Compound	Method	LOR	Unit		□ □ □ □ □ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □ □ □ □ □	EM1820497-001	EM1820497-002	EM1820497-007	EM1820497-008	EM1820497-016
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	20		<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	400		<0.5	<0.5	<0.5	<0.5	<0.5
EP075I: Organochlorine Pesticides											
Heptachlor	EP075-EM	0.03	mg/kg	----	4.8		<0.03	<0.03	<0.03	<0.03	<0.03
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	4.8		<0.03	<0.03	<0.03	<0.03	<0.03
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50		0.08	<0.05	<0.05	<0.05	<0.05
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	16		<0.03	<0.03	<0.03	<0.03	<0.03
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	50		<0.03	<0.03	<0.03	<0.03	<0.03
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	2600		<10	<10	<10	<10	<10
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	40000		<50	<50	<50	<50	140

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

Sub-Matrix: SOIL				Client sample ID		Sampling date/time				
				□□□□ □□	□□□□ □□	CPT_MW07_1 81218_0.2	CPT_MW07_1 81218_0.5	CPT_MW23_1 81218_0.2	CPT_MW23_1 81218_0.5	CPT_MW21_1 71218_0.2
						18-Dec-2018 15:00	18-Dec-2018 15:00	18-Dec-2018 15:00	18-Dec-2018 15:00	17-Dec-2018 15:00
Compound	Method	LOR	Unit	□□ □□ □□ □	□□□□ □□ □	EM1820497-001	EM1820497-002	EM1820497-007	EM1820497-008	EM1820497-016
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	4	9	4.8	5.2	4.6	7.2	4.9
EG005T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	500	<5	<5	<5	<5	<5
Cadmium	EG005T	1	mg/kg	----	100	<1	<1	<1	<1	<1
Copper	EG005T	5	mg/kg	----	5000	<5	<5	<5	<5	<5
Lead	EG005T	5	mg/kg	----	1500	25	5	36	<5	12
Molybdenum	EG005T	2	mg/kg	----	1000	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	3000	<2	<2	<2	<2	4
Selenium	EG005T	5	mg/kg	----	50	<5	<5	<5	<5	<5
Silver	EG005T	2	mg/kg	----	180	<2	<2	<2	<2	<2
Tin	EG005T	5	mg/kg	----	500	<5	<5	<5	<5	<5
Zinc	EG005T	5	mg/kg	----	35000	12	<5	33	9	6
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	75	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	<1	1	<1	1
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	10000	90	<40	<40	<40	110
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	4	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	70	<0.2	<0.2	<0.2	<0.2	<0.2
EP074I: Volatile Halogenated Compounds										
Vinyl chloride	EP074-UT	0.02	mg/kg	----	1.2	<0.02	<0.02	<0.02	<0.02	<0.02
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	2.8	<0.02	<0.02	<0.02	<0.02	<0.02
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	10	<0.01	<0.01	<0.01	<0.01	<0.01
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	<0.03	<0.03	<0.03	<0.03
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	560	<1	<1	<1	<1	<1
EP075B: Polynuclear Aromatic Hydrocarbons										



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

				Client sample ID			CPT_MW07_1 81218_0.2	CPT_MW07_1 81218_0.5	CPT_MW23_1 81218_0.2	CPT_MW23_1 81218_0.5	CPT_MW21_1 71218_0.2
Sampling date/time							18-Dec-2018 15:00	18-Dec-2018 15:00	18-Dec-2018 15:00	18-Dec-2018 15:00	17-Dec-2018 15:00
Compound	Method	LOR	Unit				EM1820497-001	EM1820497-002	EM1820497-007	EM1820497-008	EM1820497-016
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP075I: Organochlorine Pesticides											
Heptachlor	EP075-EM	0.03	mg/kg	----	1.2	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	1.2	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	0.08	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	4	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	650	<10	<10	<10	<10	<10	<10
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	10000	<50	<50	<50	<50	<50	140

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

Sub-Matrix: SOIL				Client sample ID		CPT_MW07_1 81218_0.2	CPT_MW07_1 81218_0.5	CPT_MW23_1 81218_0.2	CPT_MW23_1 81218_0.5	CPT_MW23_1 71218_0.2
				Sampling date/time						
Compound	Method	LOR	Unit	□□□□ □□	□□□□ □□	18-Dec-2018 15:00	18-Dec-2018 15:00	18-Dec-2018 15:00	18-Dec-2018 15:00	17-Dec-2018 15:00
				□□ □□	□□□□	EM1820497-001	EM1820497-002	EM1820497-007	EM1820497-008	EM1820497-016
				□□ □	□□ □					
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	4	9	4.8	5.2	4.6	7.2	4.9
EG005T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	20	<5	<5	<5	<5	<5
Cadmium	EG005T	1	mg/kg	----	3	<1	<1	<1	<1	<1
Copper	EG005T	5	mg/kg	----	100	<5	<5	<5	<5	<5
Lead	EG005T	5	mg/kg	----	300	25	5	36	<5	12
Molybdenum	EG005T	2	mg/kg	----	40	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	60	<2	<2	<2	<2	4
Selenium	EG005T	5	mg/kg	----	10	<5	<5	<5	<5	<5
Silver	EG005T	2	mg/kg	----	10	<2	<2	<2	<2	<2
Tin	EG005T	5	mg/kg	----	50	<5	<5	<5	<5	<5
Zinc	EG005T	5	mg/kg	----	200	12	<5	33	9	6
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	1	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	50	<1	<1	1	<1	1
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	450	90	<40	<40	<40	110
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066-EM	0.1	mg/kg	----	2	<0.1	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	1	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	7	<0.2	<0.2	<0.2	<0.2	<0.2
EP074I: Volatile Halogenated Compounds										
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	1	<0.01	<0.01	<0.01	<0.01	<0.01
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	<0.03	<0.03	<0.03	<0.03
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	60	<1	<1	<1	<1	<1
EP075B: Polynuclear Aromatic Hydrocarbons										



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

				Client sample ID			CPT_MW07_1 81218_0.2	CPT_MW07_1 81218_0.5	CPT_MW23_1 81218_0.2	CPT_MW23_1 81218_0.5	CPT_MW21_1 71218_0.2
				Sampling date/time	□□□□ □□	□□□□ □□	18-Dec-2018 15:00	18-Dec-2018 15:00	18-Dec-2018 15:00	18-Dec-2018 15:00	17-Dec-2018 15:00
Compound	Method	LOR	Unit		□□□□ □□□ □	□□□□ □□□ □	EM1820497-001	EM1820497-002	EM1820497-007	EM1820497-008	EM1820497-016
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----		1	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----		20	<0.5	<0.5	<0.5	<0.5	<0.5
EP075I: Organochlorine Pesticides											
Sum of organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----		1	0.08	<0.03	<0.03	<0.03	<0.03
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----		100	<10	<10	<10	<10	<10
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----		1000	<50	<50	<50	<50	140



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

				Client sample ID		CPT_MW21_1 71218_2.0	CPT_MW09_1 71218_0.2	CPT_MW09_1 71218_0.5	----	----
Sampling date/time				□□□□ □□	□□□□ □□	17-Dec-2018 15:00	17-Dec-2018 15:00	17-Dec-2018 15:00	----	----
Compound	Method	LOR	Unit	□□ □□ □□ □	□□□□ □□ □	EM1820497-019	EM1820497-022	EM1820497-023	-----	-----
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	2	12.5	6.5	4.7	6.8	----	----
EG005T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	2000	<5	<5	16	----	----
Cadmium	EG005T	1	mg/kg	----	400	<1	<1	<1	----	----
Copper	EG005T	5	mg/kg	----	20000	<5	<5	<5	----	----
Lead	EG005T	5	mg/kg	----	6000	10	8	9	----	----
Molybdenum	EG005T	2	mg/kg	----	4000	<2	4	<2	----	----
Nickel	EG005T	2	mg/kg	----	12000	4	4	8	----	----
Selenium	EG005T	5	mg/kg	----	200	<5	<5	<5	----	----
Silver	EG005T	2	mg/kg	----	720	<2	<2	<2	----	----
Zinc	EG005T	5	mg/kg	----	140000	<5	7	<5	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	300	<0.1	<0.1	<0.1	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<0.5	<0.5	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	10000	<1	1	<1	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	40000	160	80	190	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	16	<0.2	<0.2	<0.2	----	----
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	240	<0.2	<0.2	<0.2	----	----
EP074I: Volatile Halogenated Compounds										
Vinyl chloride	EP074-UT	0.02	mg/kg	----	4.8	<0.02	<0.02	<0.02	----	----
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	11	<0.02	<0.02	<0.02	----	----
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	50	<0.01	<0.01	<0.01	----	----
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	320	<0.03	<0.03	<0.03	----	----
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	2200	<1	<1	<1	----	----
EP075B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	20	<0.5	<0.5	<0.5	----	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

				Client sample ID			CPT_MW21_1 71218_2.0	CPT_MW09_1 71218_0.2	CPT_MW09_1 71218_0.5	----	----
				Sampling date/time	□ □ □ □ □ □	□ □ □ □ □ □	17-Dec-2018 15:00	17-Dec-2018 15:00	17-Dec-2018 15:00	----	----
Compound	Method	LOR	Unit		□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □ □ □ □ □	EM1820497-019	EM1820497-022	EM1820497-023	-----	-----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----		400	<0.5	<0.5	<0.5	----	----
EP075I: Organochlorine Pesticides											
Heptachlor	EP075-EM	0.03	mg/kg	----		4.8	<0.03	<0.03	<0.03	----	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----		4.8	<0.03	<0.03	<0.03	----	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----		50	<0.05	<0.05	<0.05	----	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----		16	<0.03	<0.03	<0.03	----	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----		50	<0.03	<0.03	<0.03	----	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP074-UT	10	mg/kg	----		2600	<10	<10	<10	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----		40000	<50	160	<50	----	----

Table 2: Soil Hazard Categorisation Thresholds : Category C:

Client sample ID

Sub-Matrix: SOIL				Client sample ID		CPT_MW21_1 71218_2.0	CPT_MW09_1 71218_0.2	CPT_MW09_1 71218_0.5	----	----		
				Sampling date/time							□□□□ □□	□□□□ □□
				□□ □□ □□ □	□□□□ □□ □						17-Dec-2018 15:00	17-Dec-2018 15:00
Compound	Method	LOR	Unit			EM1820497-019	EM1820497-022	EM1820497-023	-----	-----		
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	4	9	6.5	4.7	6.8	----	----		
EG005T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	500	<5	<5	16	----	----		
Cadmium	EG005T	1	mg/kg	----	100	<1	<1	<1	----	----		
Copper	EG005T	5	mg/kg	----	5000	<5	<5	<5	----	----		
Lead	EG005T	5	mg/kg	----	1500	10	8	9	----	----		
Molybdenum	EG005T	2	mg/kg	----	1000	<2	4	<2	----	----		
Nickel	EG005T	2	mg/kg	----	3000	4	4	8	----	----		
Selenium	EG005T	5	mg/kg	----	50	<5	<5	<5	----	----		
Silver	EG005T	2	mg/kg	----	180	<2	<2	<2	----	----		
Tin	EG005T	5	mg/kg	----	500	<5	<5	<5	----	----		
Zinc	EG005T	5	mg/kg	----	35000	<5	7	<5	----	----		
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	75	<0.1	<0.1	<0.1	----	----		
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	<0.5	<0.5	----	----		
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	1	<1	----	----		
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	10000	160	80	190	----	----		
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	4	<0.2	<0.2	<0.2	----	----		
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	70	<0.2	<0.2	<0.2	----	----		
EP074I: Volatile Halogenated Compounds												
Vinyl chloride	EP074-UT	0.02	mg/kg	----	1.2	<0.02	<0.02	<0.02	----	----		
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	2.8	<0.02	<0.02	<0.02	----	----		
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	10	<0.01	<0.01	<0.01	----	----		
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	<0.03	<0.03	----	----		
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	560	<1	<1	<1	----	----		
EP075B: Polynuclear Aromatic Hydrocarbons												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

				Client sample ID		CPT_MW21_1 71218_2.0	CPT_MW09_1 71218_0.2	CPT_MW09_1 71218_0.5	----	----
Sampling date/time				□□□□ □□	□□□□ □□	17-Dec-2018 15:00	17-Dec-2018 15:00	17-Dec-2018 15:00	----	----
Compound	Method	LOR	Unit	□□□□ □□ □	□□□□ □□ □	EM1820497-019	EM1820497-022	EM1820497-023	-----	-----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	----	----
EP075I: Organochlorine Pesticides										
Heptachlor	EP075-EM	0.03	mg/kg	----	1.2	<0.03	<0.03	<0.03	----	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	1.2	<0.03	<0.03	<0.03	----	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	<0.05	<0.05	<0.05	----	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	4	<0.03	<0.03	<0.03	----	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	<0.03	<0.03	----	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	650	<10	<10	<10	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	10000	<50	160	<50	----	----

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

Sub-Matrix: SOIL				Client sample ID		CPT_MW21_1 71218_2.0	CPT_MW09_1 71218_0.2	CPT_MW09_1 71218_0.5	----	----		
				Sampling date/time							□□□□ □□	□□□□ □□
											□□ □□ □□ □	□□□□ □□ □
Compound	Method	LOR	Unit									
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	4	9	6.5	4.7	6.8	----	----		
EG005T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	20	<5	<5	16	----	----		
Cadmium	EG005T	1	mg/kg	----	3	<1	<1	<1	----	----		
Copper	EG005T	5	mg/kg	----	100	<5	<5	<5	----	----		
Lead	EG005T	5	mg/kg	----	300	10	8	9	----	----		
Molybdenum	EG005T	2	mg/kg	----	40	<2	4	<2	----	----		
Nickel	EG005T	2	mg/kg	----	60	4	4	8	----	----		
Selenium	EG005T	5	mg/kg	----	10	<5	<5	<5	----	----		
Silver	EG005T	2	mg/kg	----	10	<2	<2	<2	----	----		
Tin	EG005T	5	mg/kg	----	50	<5	<5	<5	----	----		
Zinc	EG005T	5	mg/kg	----	200	<5	7	<5	----	----		
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	1	<0.1	<0.1	<0.1	----	----		
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1	<0.5	<0.5	<0.5	----	----		
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	50	<1	1	<1	----	----		
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	450	160	80	190	----	----		
EP066: Polychlorinated Biphenyls (PCB)												
Total Polychlorinated biphenyls	EP066-EM	0.1	mg/kg	----	2	<0.1	<0.1	<0.1	----	----		
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	1	<0.2	<0.2	<0.2	----	----		
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	7	<0.2	<0.2	<0.2	----	----		
EP074I: Volatile Halogenated Compounds												
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	1	<0.01	<0.01	<0.01	----	----		
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	<0.03	<0.03	----	----		
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	60	<1	<1	<1	----	----		
EP075B: Polynuclear Aromatic Hydrocarbons												



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL				Client sample ID		□□□□ □□	□□□□ □□	CPT_MW21_1	CPT_MW09_1	CPT_MW09_1	----	----
				71218_2.0	71218_0.2			71218_0.5				
				17-Dec-2018 15:00	17-Dec-2018 15:00			17-Dec-2018 15:00	----	----		
Compound	Method	LOR	Unit	□□ □□	□□□□	EM1820497-019	EM1820497-022	EM1820497-023	-----	-----		
				□□ □□	□□ □□							
EP075B: Polynuclear Aromatic Hydrocarbons - Continued												
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	1	<0.5	<0.5	<0.5	----	----		
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	20	<0.5	<0.5	<0.5	----	----		
EP075I: Organochlorine Pesticides												
Sum of organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	<0.03	<0.03	----	----		
EP080/071: Total Petroleum Hydrocarbons												
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	100	<10	<10	<10	----	----		
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	1000	<50	160	<50	----	----		



Environmental

QUALITY CONTROL REPORT

Work Order	: EM1820497	Page	: 1 of 20
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60582811	Date Samples Received	: 18-Dec-2018
Order number	: [REDACTED]	Date Analysis Commenced	: 20-Dec-2018
C-O-C number	: ----	Issue Date	: 07-Jan-2019
Sampler	: SMcC		
Site	: Crib Point to Pakenham		
Quote number	: EN/096/18		
No. of samples received	: 30		
No. of samples analysed	: 21		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□□□ □□ □□

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

□□□□□□

Senior Inorganic Chemist
2IC Organic Chemist
2IC Organic Chemist
Senior Acid Sulfate Soil Chemist
Senior Organic Chemist

□□□ □□□ □□□ □□□ □

Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC
Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2107674)									
EM1820497-001	CPT_MW07_181218_0.2	EA001: pH (CaCl2)	----	0.1	pH Unit	4.8	4.8	0.00	0% - 20%
EA026 : Chromium Reducible Sulfur (QC Lot: 2117455)									
EM1820497-003	CPT_MW07_181218_1.0	EA026: Chromium Reducible Sulphur	----	0.005	%	<0.005	<0.005	0.00	No Limit
EP1814798-004	Anonymous	EA026: Chromium Reducible Sulphur	----	0.005	%	0.238	0.236	0.503	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2108082)									
EM1820497-001	CPT_MW07_181218_0.2	EA055: Moisture Content	----	0.1	%	10.3	10.5	1.57	0% - 50%
EM1820571-004	Anonymous	EA055: Moisture Content	----	0.1	%	6.7	6.8	1.72	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 2109194)									
EM1820294-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	112	101	10.7	0% - 20%
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	34	34	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	12	10.6	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	107	102	4.09	0% - 20%
EM1820497-001	CPT_MW07_181218_0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	8	49.6	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QC Lot: 2109194) - continued									
EM1820497-001	CPT_MW07_181218_0.2	EG005T: Lead	7439-92-1	5	mg/kg	25	31	20.2	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	12	13	8.94	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2109193)									
EM1820294-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1820497-001	CPT_MW07_181218_0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2109229)									
EM1820294-001	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	0.5	<0.5	0.00	No Limit
EM1820497-022	CPT_MW09_171218_0.2	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2109360)									
EM1820466-002	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	2	2	0.00	No Limit
EM1820470-003	Anonymous	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.00	No Limit
EK040T: Fluoride Total (QC Lot: 2107656)									
EM1820497-001	CPT_MW07_181218_0.2	EK040T: Fluoride	16984-48-8	40	mg/kg	90	80	16.1	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2109145)									
EM1820497-001	CPT_MW07_181218_0.2	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1820557-004	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2107655)									
EM1820497-001	CPT_MW07_181218_0.2	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2107655)									
EM1820497-001	CPT_MW07_181218_0.2	EP074-UT: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP074I: Volatile Halogenated Compounds (QC Lot: 2107655)									
EM1820497-001	CPT_MW07_181218_0.2	EP074-UT: 1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: 1,2,4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.00	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074I: Volatile Halogenated Compounds (QC Lot: 2107655) - continued									
EM1820497-001	CPT_MW07_181218_0.2	EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.00	No Limit
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.00	No Limit		
EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2109143)									
EM1820497-001	CPT_MW07_181218_0.2	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EM1820557-004	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.06	<0.06	0.00	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2109143)									
EM1820497-001	CPT_MW07_181218_0.2	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2109143) - continued									
EM1820497-001	CPT_MW07_181218_0.2	EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.00	No Limit
EM1820557-004	Anonymous	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.00	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.00	No Limit
		EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.00	No Limit
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2109143)									
EM1820497-001	CPT_MW07_181218_0.2	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			207-08-9						
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1820557-004	Anonymous	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			207-08-9						



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2109143) - continued									
EM1820557-004	Anonymous	EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075I: Organochlorine Pesticides (QC Lot: 2109143)									
EM1820497-001	CPT_MW07_181218_0.2	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	0.08	0.07	0.00	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EM1820557-004	Anonymous	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075I: Organochlorine Pesticides (QC Lot: 2109143) - continued									
EM1820557-004	Anonymous	EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.00	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2107655)									
EM1820497-001	CPT_MW07_181218_0.2	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2109144)									
EM1820497-001	CPT_MW07_181218_0.2	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM1820557-004	Anonymous	EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2107655)									
EM1820497-001	CPT_MW07_181218_0.2	EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
		EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2109144)									
EM1820497-001	CPT_MW07_181218_0.2	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EM1820557-004	Anonymous	EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA005P: pH by PC Titrator (QC Lot: 2109324)									
EM1820453-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.43	8.22	2.52	0% - 20%
EM1820463-006	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.91	7.88	0.380	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2122627)									
EM1820497-013	CPT_QC306_181218	EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2122629)									
EM1820576-005	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0126	0.0132	4.40	0% - 20%
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.021	0.021	0.00	0% - 20%
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.138	0.133	3.55	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.014	0.014	0.00	0% - 50%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.092	0.092	0.00	0% - 20%
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2122629) - continued									
EM1820576-005	Anonymous	EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.864	0.844	2.35	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1820497-013	CPT_QC306_181218	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 2122628)									
EM1820576-005	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1820497-013	CPT_QC306_181218	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 2115226)									
EM1820497-013	CPT_QC306_181218	EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2109282)									
EM1820497-013	CPT_QC306_181218	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	0.00	No Limit
EM1820562-008	Anonymous	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	0.00	No Limit
EK040P: Fluoride by PC Titrator (QC Lot: 2109321)									
EM1820205-003	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	3.2	3.1	0.00	0% - 20%
EM1819797-004	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	4.9	4.9	0.00	0% - 20%
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2111601)									
EM1820497-013	CPT_QC306_181218	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
EM1820637-002	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2111601)									
EM1820497-013	CPT_QC306_181218	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Methylene chloride	75-09-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2111601) - continued									
EM1820497-013	CPT_QC306_181218	EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
EM1820637-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Methylene chloride	75-09-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2111601)									
EM1820497-013	CPT_QC306_181218	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
EM1820637-002	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2111601)									
EM1820497-013	CPT_QC306_181218	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
EM1820637-002	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2111595)									
EM1820491-009	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1820497-029	CPT_QC405_171218	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2111602)									
EM1820497-013	CPT_QC306_181218	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1820637-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	120	100	14.9	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2111595)									
EM1820491-009	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1820497-029	CPT_QC405_171218	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2111602)									
EM1820497-013	CPT_QC306_181218	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1820637-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	360	310	14.3	0% - 50%



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 2111595)									
EM1820491-009	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1820497-029	CPT_QC405_171218	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EP080: BTEXN (QC Lot: 2111602)									
EM1820497-013	CPT_QC306_181218	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1820637-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	4	3	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	42	36	15.7	0% - 20%
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	2	2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	30	28	7.76	No Limit

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
		LCS	Low	High
<0.005	0.25483 %	86.7	70	130
<5	21.7 mg/kg	86.6	78	107
<1	4.64 mg/kg	92.7	76	108
<5	32 mg/kg	90.5	78	108
<5	40 mg/kg	88.2	78	106
<2	7.9 mg/kg	101	78	114
<2	55 mg/kg	97.8	80	109
<5	5.37 mg/kg	94.0	92	110
<2	2.1 mg/kg	83.6	80	108
<5	5.2 mg/kg	91.9	78	117
<5	60.8 mg/kg	96.0	79	110
<0.1	2.57 mg/kg	87.2	77	104
<0.5	40 mg/kg	84.1	75	112
<1	20 mg/kg	101	80	107
<40	400 mg/kg	95.5	75	110
<0.1	1 mg/kg	112	63	118
<0.2	2.1 mg/kg	86.0	68	117
<0.5	2.1 mg/kg	84.0	67	118
<0.5	2.1 mg/kg	83.6	66	119
<0.5	4.2 mg/kg	82.6	66	115
<0.5	2.1 mg/kg	86.3	71	115
<0.5	2.1 mg/kg	84.0	68	113
<1	0.6 mg/kg	102	75	113



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP074I: Volatile Halogenated Compounds (QCLot: 2107655) - continued								
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	77.2	51	136
EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	80.5	56	125
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	88.7	70	117
EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	83.3	61	122
EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	87.5	70	114
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	88.6	69	112
EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	82.6	62	124
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	80.3	56	126
EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	91.3	73	118
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	85.2	66	117
EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	95.1	76	115
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	80.1	62	120
EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	0.1 mg/kg	86.1	71	118
EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	96.1	69	119
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	80.7	47	125
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	88.2	73	114
EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	85.0	66	114
EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	89.8	73	110
EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	81.8	54	121
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2109143)								
EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	2 mg/kg	96.0	69	123
EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	2 mg/kg	97.3	55	128
EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	2 mg/kg	101	70	123
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	2 mg/kg	105	56	128
EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	2 mg/kg	105	66	126
EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	2 mg/kg	104	60	126
EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	2 mg/kg	89.5	65	124
EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/5	0.05	mg/kg	<0.05	4 mg/kg	92.4	64	128
	8-90-2							
EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	4 mg/kg	86.8	43	127
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2109143)								
EP075-EM: Phenol	108-95-2	1	mg/kg	<1	2 mg/kg	103	58	126
EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	2 mg/kg	93.7	65	126
EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	4 mg/kg	94.4	64	123
EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	2 mg/kg	93.9	53	128
EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	2 mg/kg	91.8	56	136
EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	12 mg/kg	85.5	41	156
EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	12 mg/kg	104	48	130
EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	12 mg/kg	81.6	47	125



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2109143) - continued								
EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	12 mg/kg	85.8	51	123
EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	5	mg/kg	<5	10 mg/kg	59.2	36	137
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2109143)								
EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	2 mg/kg	105	70	123
EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	2 mg/kg	97.8	70	130
EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	2 mg/kg	106	68	131
EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	2 mg/kg	101	72	128
EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	2 mg/kg	101	75	128
EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	1 mg/kg	105	55	127
EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	2 mg/kg	97.5	75	128
EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	2 mg/kg	102	73	130
EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	2 mg/kg	97.5	72	131
EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	2 mg/kg	108	77	133
EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	4 mg/kg	104	76	133
EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	2 mg/kg	99.3	70	130
EP075-EM: Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	2 mg/kg	101	72	134
EP075-EM: Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	2 mg/kg	102	72	135
EP075-EM: Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	2 mg/kg	101	71	134
EP075I: Organochlorine Pesticides (QCLot: 2109143)								
EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	2 mg/kg	88.7	71	122
EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	2 mg/kg	76.5	70	126
EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	2 mg/kg	90.5	70	130
EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	2 mg/kg	88.0	71	129
EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	2 mg/kg	98.6	74	128
EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	2 mg/kg	87.2	72	126
EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	2 mg/kg	88.7	72	127
EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	2 mg/kg	86.9	73	129
EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	2 mg/kg	82.8	72	131
EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	2 mg/kg	84.4	73	130
EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	2 mg/kg	83.4	64	137
EP075-EM: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	2 mg/kg	86.8	73	131
EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	2 mg/kg	88.6	72	132
EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	2 mg/kg	96.7	42	160
EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	2 mg/kg	60.5	55	148
EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	2 mg/kg	92.9	73	132
EP075-EM: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	2 mg/kg	96.2	75	134
EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	2 mg/kg	81.6	73	133
EP075-EM: 4,4`-DDT	50-29-3	0.05	mg/kg	<0.05	2 mg/kg	104	67	133

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075I: Organochlorine Pesticides (QCLot: 2109143) - continued								
EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	2 mg/kg	92.4	67	135
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2107655)								
EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	39.6 mg/kg	88.5	63	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2109144)								
EP071-EM: C10 - C14 Fraction	----	50	mg/kg	<50	806 mg/kg	102	70	120
EP071-EM: C15 - C28 Fraction	----	100	mg/kg	<100	3006 mg/kg	109	83	121
EP071-EM: C29 - C36 Fraction	----	100	mg/kg	<100	1584 mg/kg	100	77	117
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2107655)								
EP074-UT: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	48.9 mg/kg	88.8	62	121
EP074-UT: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTE X	10	mg/kg	<10	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2109144)								
EP071-EM: >C10 - C16 Fraction	----	50	mg/kg	<50	1160 mg/kg	104	75	119
EP071-EM: >C16 - C34 Fraction	----	100	mg/kg	<100	3978 mg/kg	106	82	119
EP071-EM: >C34 - C40 Fraction	----	100	mg/kg	<100	313 mg/kg	95.3	68	124

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2122627)								
EG020B-F: Silver	7440-22-4	0.001	mg/L	<0.001	0.02 mg/L	103	84	116
EG020F: Dissolved Metals by ICP-MS (QCLot: 2122629)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.6	91	107
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	91.8	84	104
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.5	82	103
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.8	83	105
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	98.0	83	109
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.9	82	106
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	93.2	82	109
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	95.4	83	109
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.2	85	109
EG035F: Dissolved Mercury by FIMS (QCLot: 2122628)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	106	76	114
EG050F: Dissolved Hexavalent Chromium (QCLot: 2115226)								
EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.5 mg/L	100	92	111
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2109282)								
EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	0.2 mg/L	104	75	109
EK040P: Fluoride by PC Titrator (QCLot: 2109321)								



Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result			Low	High
EP040P: Fluoride by PC Titrator (QCLot: 2109321) - continued								
EP040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	105	87	117
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2109031)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	92.0	48	124
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2111601)								
EP074: Styrene	100-42-5	5	µg/L	<5	20 µg/L	90.6	79	116
EP074E: Halogenated Aliphatic Compounds (QCLot: 2111601)								
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	200 µg/L	100	53	135
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	20 µg/L	92.1	63	124
EP074: Methylene chloride	75-09-2	5	µg/L	<5	20 µg/L	91.7	83	122
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	20 µg/L	93.3	68	119
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	20 µg/L	95.2	77	118
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	20 µg/L	99.1	68	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	20 µg/L	93.7	62	117
EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	20 µg/L	101	81	117
EP074: Trichloroethene	79-01-6	5	µg/L	<5	20 µg/L	101	67	120
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	20 µg/L	106	84	117
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	20 µg/L	88.0	67	120
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	20 µg/L	92.5	76	112
EP074: 1,1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	20 µg/L	97.4	81	124
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	20 µg/L	105	62	128
EP074F: Halogenated Aromatic Compounds (QCLot: 2111601)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	20 µg/L	94.6	81	116
EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	20 µg/L	95.5	75	118
EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	20 µg/L	91.4	81	113
EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	20 µg/L	103	64	122
EP074G: Trihalomethanes (QCLot: 2111601)								
EP074: Chloroform	67-66-3	5	µg/L	<5	20 µg/L	97.0	79	117
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2109032)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	87.0	48	110
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	89.2	50	117
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	89.2	53	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	88.4	54	118
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	91.9	59	119
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	91.0	51	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	93.7	61	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	93.2	56	120
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	90.4	53	120
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	91.4	57	122



Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2109032) - continued								
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	95.3	56	131
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	91.0	59	124
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	91.4	54	124
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	91.1	55	124
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	90.8	54	124
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	91.8	56	124
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2109030)								
EP075-EM: 2-Chlorophenol	95-57-8	2	µg/L	<2	10 µg/L	85.3	54	117
EP075-EM: 2,4-Dichlorophenol	120-83-2	2	µg/L	<2	10 µg/L	96.1	46	116
EP075-EM: 2,6-Dichlorophenol	87-65-0	2	µg/L	<2	10 µg/L	107	61	123
EP075-EM: 4-Chloro-3-methylphenol	59-50-7	4	µg/L	<4	10 µg/L	109	45	116
EP075-EM: 2,4,5-Trichlorophenol	95-95-4	2	µg/L	<2	10 µg/L	107	57	131
EP075-EM: 2,4,6-Trichlorophenol	88-06-2	2	µg/L	<2	10 µg/L	112	42	126
EP075-EM: 2,3,5,6-Tetrachlorophenol	935-95-5	2	µg/L	<2	20 µg/L	96.9	54	136
EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/5	2	µg/L	<2	30 µg/L	106	53	125
	8-90-2							
EP075-EM: Pentachlorophenol	87-86-5	2	µg/L	<2	20 µg/L	84.3	32	122
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2109030)								
EP075-EM: Phenol	108-95-2	4	µg/L	<4	10 µg/L	43.6	18	51
EP075-EM: 2-Methylphenol	95-48-7	4	µg/L	<4	10 µg/L	77.8	49	106
EP075-EM: 3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	20 µg/L	78.4	41	91
EP075-EM: 2-Nitrophenol	88-75-5	4	µg/L	<4	10 µg/L	102	48	120
EP075-EM: 2,4-Dimethylphenol	105-67-9	4	µg/L	<4	10 µg/L	97.7	47	128
EP075-EM: 2,4-Dinitrophenol	51-28-5	100	µg/L	<100	60 µg/L	69.8	41	130
EP075-EM: 4-Nitrophenol	100-02-7	50	µg/L	<50	60 µg/L	40.0	19	49
EP075-EM: 2-Methyl-4,6-dinitrophenol	8071-51-0	50	µg/L	<50	60 µg/L	76.5	47	126
EP075-EM: Dinoseb	88-85-7	50	µg/L	<50	60 µg/L	86.4	49	128
EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	50	µg/L	<50	50 µg/L	99.8	61	135
EP075I: Organochlorine Pesticides (QCLot: 2109030)								
EP075-EM: alpha-BHC	319-84-6	0.5	µg/L	<0.5	10 µg/L	101	57	126
EP075-EM: Heptachlor	76-44-8	0.5	µg/L	<0.5	10 µg/L	96.7	62	134
EP075-EM: Aldrin	309-00-2	0.5	µg/L	<0.5	10 µg/L	97.1	58	133
EP075-EM: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	10 µg/L	101	60	133
EP075-EM: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	10 µg/L	101	59	132
EP075-EM: 4,4'-DDE	72-55-9	0.5	µg/L	<0.5	10 µg/L	99.3	61	137
EP075-EM: Dieldrin	60-57-1	0.5	µg/L	<0.5	10 µg/L	91.4	59	130
EP075-EM: 4,4'-DDD	72-54-8	0.5	µg/L	<0.5	10 µg/L	95.5	59	135



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075I: Organochlorine Pesticides (QCLot: 2109030) - continued								
EP075-EM: 4,4'-DDT	50-29-3	0.5	µg/L	<0.5	10 µg/L	99.8	59	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2109033)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	4331 µg/L	97.8	50	129
EP071: C15 - C28 Fraction	----	100	µg/L	<100	16952 µg/L	106	55	132
EP071: C29 - C36 Fraction	----	50	µg/L	<50	8695 µg/L	107	55	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2111595)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	91.6	65	126
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2111602)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	105	65	126
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2109033)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	6292 µg/L	104	53	129
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	22143 µg/L	107	56	131
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1677 µg/L	112	53	136
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2111595)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	90.6	64	124
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2111602)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	103	64	124
EP080: BTEXN (QCLot: 2111595)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	90.8	69	123
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	91.1	73	124
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	90.8	71	125
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	96.4	72	129
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	99.5	76	129
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	85.7	70	125
EP080: BTEXN (QCLot: 2111602)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	106	69	123
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	103	73	124
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	107	71	125
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	108	72	129
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	108	76	129
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	104	70	125

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%) LowHigh	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number				
EG005T: Total Metals by ICP-AES (QCLot: 2109194)							
EM1820294-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	98.4	78	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.9	84	116
		EG005T: Copper	7440-50-8	50 mg/kg	96.0	82	124
		EG005T: Lead	7439-92-1	50 mg/kg	97.6	76	124
		EG005T: Molybdenum	7439-98-7	50 mg/kg	87.7	79	117
		EG005T: Nickel	7440-02-0	50 mg/kg	98.8	78	120
		EG005T: Selenium	7782-49-2	50 mg/kg	86.0	71	125
		EG005T: Zinc	7440-66-6	50 mg/kg	99.3	74	128
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2109193)							
EM1820294-002	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	99.9	76	116
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2109229)							
EM1820294-003	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	40 mg/kg	82.1	58	114
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2109360)							
EM1820466-005	Anonymous	EK026SF: Total Cyanide	57-12-5	20 mg/kg	100	77	113
EK040T: Fluoride Total (QCLot: 2107656)							
EM1820497-002	CPT_MW07_181218_0.5	EK040T: Fluoride	16984-48-8	400 mg/kg	89.2	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2109145)							
EM1820497-008	CPT_MW23_181218_0.5	EP066-EM: Total Polychlorinated biphenyls	----	1 mg/kg	131	36	152
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2107655)							
EM1820497-002	CPT_MW07_181218_0.5	EP074-UT: Benzene	71-43-2	2 mg/kg	84.7	50	138
		EP074-UT: Toluene	108-88-3	2 mg/kg	82.9	56	134
EP074I: Volatile Halogenated Compounds (QCLot: 2107655)							
EM1820497-002	CPT_MW07_181218_0.5	EP074-UT: 1,1-Dichloroethene	75-35-4	2 mg/kg	80.9	26	141
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	78.7	50	134
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	84.9	28	134
EP075A: Phenolic Compounds (Halogenated) (QCLot: 2109143)							
EM1820497-002	CPT_MW07_181218_0.5	EP075-EM: 2-Chlorophenol	95-57-8	1 mg/kg	88.2	34	118
		EP075-EM: 4-Chloro-3-methylphenol	59-50-7	1 mg/kg	96.2	41	139
		EP075-EM: Pentachlorophenol	87-86-5	1 mg/kg	49.7	10	144
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2109143)							
EM1820497-002	CPT_MW07_181218_0.5	EP075-EM: Phenol	108-95-2	1 mg/kg	94.2	32	134
		EP075-EM: 2-Nitrophenol	88-75-5	1 mg/kg	82.5	13	129
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2109143)							
EM1820497-002	CPT_MW07_181218_0.5	EP075-EM: Acenaphthene	83-32-9	1 mg/kg	93.1	46	138
		EP075-EM: Pyrene	129-00-0	1 mg/kg	93.5	27	169

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2107655)							
EM1820497-002	CPT_MW07_181218_0.5	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	76.8	43	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2109144)							
EM1820497-007	CPT_MW23_181218_0.2	EP071-EM: C10 - C14 Fraction	----	806 mg/kg	104	53	123
		EP071-EM: C15 - C28 Fraction	----	3006 mg/kg	110	70	124
		EP071-EM: C29 - C36 Fraction	----	1584 mg/kg	103	64	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2107655)							
EM1820497-002	CPT_MW07_181218_0.5	EP074-UT: C6 - C10 Fraction	C6_C10	33 mg/kg	75.0	42	106
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2109144)							
EM1820497-007	CPT_MW23_181218_0.2	EP071-EM: >C10 - C16 Fraction	----	1160 mg/kg	106	65	123
		EP071-EM: >C16 - C34 Fraction	----	3978 mg/kg	108	67	121
		EP071-EM: >C34 - C40 Fraction	----	313 mg/kg	103	44	126
Sub-Matrix: WATER				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	SpikeRecovery(%)	Recovery Limits (%)	
				Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2122629)							
EM1820497-013	CPT_QC306_181218	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	90.9	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	88.4	81	133
		EG020A-F: Copper	7440-50-8	0.2 mg/L	89.5	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	92.1	75	133
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	91.4	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	93.7	75	131
EG035F: Dissolved Mercury by FIMS (QCLot: 2122628)							
EM1820497-028	CPT_QC305_171218	EG035F: Mercury	7439-97-6	0.01 mg/L	107	70	120
EG050F: Dissolved Hexavalent Chromium (QCLot: 2115226)							
EM1820497-028	CPT_QC305_171218	EG050F: Hexavalent Chromium	18540-29-9	0.5 mg/L	100	59	127
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2109282)							
EM1820497-028	CPT_QC305_171218	EK026SF: Total Cyanide	57-12-5	0.2 mg/L	103	70	130
EK040P: Fluoride by PC Titrator (QCLot: 2109321)							
EM1819797-008	Anonymous	EK040P: Fluoride	16984-48-8	50 mg/L	102	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2111601)							
EM1820497-028	CPT_QC305_171218	EP074: 1.1-Dichloroethene	75-35-4	20 µg/L	121	40	124
		EP074: Trichloroethene	79-01-6	20 µg/L	102	54	126
EP074F: Halogenated Aromatic Compounds (QCLot: 2111601)							
EM1820497-028	CPT_QC305_171218	EP074: Chlorobenzene	108-90-7	20 µg/L	103	68	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2111595)							



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2111595) - continued							
EM1820491-010	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	87.7	43	125
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2111602)							
EM1820497-028	CPT_QC305_171218	EP080: C6 - C9 Fraction	----	280 µg/L	101	43	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2111595)							
EM1820491-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	85.2	44	122
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2111602)							
EM1820497-028	CPT_QC305_171218	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	98.1	44	122
EP080: BTEXN (QCLot: 2111595)							
EM1820491-010	Anonymous	EP080: Benzene	71-43-2	20 µg/L	99.9	68	130
		EP080: Toluene	108-88-3	20 µg/L	103	72	132
EP080: BTEXN (QCLot: 2111602)							
EM1820497-028	CPT_QC305_171218	EP080: Benzene	71-43-2	20 µg/L	120	68	130
		EP080: Toluene	108-88-3	20 µg/L	113	72	132

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1820497	Page	: 1 of 15
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Telephone	: +6138549 9645
Project	: 60582811	Date Samples Received	: 18-Dec-2018
Site	: Crib Point to Pakenham	Issue Date	: 07-Jan-2019
Sampler	: SMcC	No. of samples received	: 30
Order number	:	No. of samples analysed	: 21

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA026 : Chromium Reducible Sulfur						
Snap Lock Bag CPT_MW21_171218_0.5, CPT_MW09_171218_0.5,	CPT_MW21_171218_3.0, CPT_MW09_171218_3.0	31-Dec-2018	18-Dec-2018	13	----	----

Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural CPT_QC305_171218	----	----	----	27-Dec-2018	17-Dec-2018	10
Clear Plastic Bottle - Natural CPT_QC306_181218	----	----	----	27-Dec-2018	18-Dec-2018	9

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA001: pH in soil using 0.01M CaCl extract								
Soil Glass Jar - Unpreserved (EA001) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	20-Dec-2018	24-Dec-2018	✓	20-Dec-2018	20-Dec-2018	✓
Soil Glass Jar - Unpreserved (EA001) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	20-Dec-2018	25-Dec-2018	✓	20-Dec-2018	20-Dec-2018	✓
EA026 : Chromium Reducible Sulfur								
Snap Lock Bag (EA026) CPT_MW21_171218_0.5, CPT_MW09_171218_0.5,	CPT_MW21_171218_3.0, CPT_MW09_171218_3.0	17-Dec-2018	31-Dec-2018	18-Dec-2018	✗	31-Dec-2018	31-Mar-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA026) CPT_MW07_181218_1.0, CPT_MW23_181218_1.0,	CPT_MW07_181218_4.0, CPT_MW23_181218_3.0	18-Dec-2018	31-Dec-2018	12-Sep-2021	✓	31-Dec-2018	31-Mar-2019	✓
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	----	----	----	20-Dec-2018	31-Dec-2018	✓
Soil Glass Jar - Unpreserved (EA055) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	----	----	----	20-Dec-2018	01-Jan-2019	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	27-Dec-2018	15-Jun-2019	✓	28-Dec-2018	15-Jun-2019	✓
Soil Glass Jar - Unpreserved (EG005T) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	27-Dec-2018	16-Jun-2019	✓	28-Dec-2018	16-Jun-2019	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	27-Dec-2018	14-Jan-2019	✓	28-Dec-2018	14-Jan-2019	✓
Soil Glass Jar - Unpreserved (EG035T) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	27-Dec-2018	15-Jan-2019	✓	28-Dec-2018	15-Jan-2019	✓
EG048: Hexavalent Chromium (Alkaline Digest)								
Soil Glass Jar - Unpreserved (EG048G) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	21-Dec-2018	14-Jan-2019	✓	27-Dec-2018	28-Dec-2018	✓
Soil Glass Jar - Unpreserved (EG048G) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	21-Dec-2018	15-Jan-2019	✓	27-Dec-2018	28-Dec-2018	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK026SF: Total CN by Segmented Flow Analyser								
Soil Glass Jar - Unpreserved (EK026SF) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	27-Dec-2018	31-Dec-2018	✓	31-Dec-2018	10-Jan-2019	✓
Soil Glass Jar - Unpreserved (EK026SF) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	27-Dec-2018	01-Jan-2019	✓	31-Dec-2018	10-Jan-2019	✓
EK040T: Fluoride Total								
Soil Glass Jar - Unpreserved (EK040T) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	20-Dec-2018	14-Jan-2019	✓	28-Dec-2018	14-Jan-2019	✓
Soil Glass Jar - Unpreserved (EK040T) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	20-Dec-2018	15-Jan-2019	✓	28-Dec-2018	15-Jan-2019	✓
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066-EM) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	21-Dec-2018	31-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
Soil Glass Jar - Unpreserved (EP066-EM) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	21-Dec-2018	01-Jan-2019	✓	31-Dec-2018	30-Jan-2019	✓
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	20-Dec-2018	24-Dec-2018	✓	21-Dec-2018	24-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	20-Dec-2018	25-Dec-2018	✓	21-Dec-2018	25-Dec-2018	✓
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	20-Dec-2018	24-Dec-2018	✓	21-Dec-2018	24-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	20-Dec-2018	25-Dec-2018	✓	21-Dec-2018	25-Dec-2018	✓
EP074I: Volatile Halogenated Compounds								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	20-Dec-2018	24-Dec-2018	✓	21-Dec-2018	24-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	20-Dec-2018	25-Dec-2018	✓	21-Dec-2018	25-Dec-2018	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075A: Phenolic Compounds (Halogenated)								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	21-Dec-2018	31-Dec-2018	✔	31-Dec-2018	30-Jan-2019	✔
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	21-Dec-2018	01-Jan-2019	✔	31-Dec-2018	30-Jan-2019	✔
EP075A: Phenolic Compounds (Non-halogenated)								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	21-Dec-2018	31-Dec-2018	✔	31-Dec-2018	30-Jan-2019	✔
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	21-Dec-2018	01-Jan-2019	✔	31-Dec-2018	30-Jan-2019	✔
EP075B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	21-Dec-2018	31-Dec-2018	✔	31-Dec-2018	30-Jan-2019	✔
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	21-Dec-2018	01-Jan-2019	✔	31-Dec-2018	30-Jan-2019	✔
EP075I: Organochlorine Pesticides								
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	21-Dec-2018	31-Dec-2018	✔	31-Dec-2018	30-Jan-2019	✔
Soil Glass Jar - Unpreserved (EP075-EM) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	21-Dec-2018	01-Jan-2019	✔	31-Dec-2018	30-Jan-2019	✔
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	20-Dec-2018	24-Dec-2018	✔	21-Dec-2018	24-Dec-2018	✔
Soil Glass Jar - Unpreserved (EP071-EM) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	21-Dec-2018	31-Dec-2018	✔	31-Dec-2018	30-Jan-2019	✔
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	20-Dec-2018	25-Dec-2018	✔	21-Dec-2018	25-Dec-2018	✔
Soil Glass Jar - Unpreserved (EP071-EM) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	21-Dec-2018	01-Jan-2019	✔	31-Dec-2018	30-Jan-2019	✔



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	20-Dec-2018	24-Dec-2018	✔	21-Dec-2018	24-Dec-2018	✔
Soil Glass Jar - Unpreserved (EP071-EM) CPT_MW21_171218_0.2, CPT_MW09_171218_0.2,	CPT_MW21_171218_2.0, CPT_MW09_171218_0.5	17-Dec-2018	21-Dec-2018	31-Dec-2018	✔	31-Dec-2018	30-Jan-2019	✔
Soil Glass Jar - Unpreserved (EP074-UT) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	20-Dec-2018	25-Dec-2018	✔	21-Dec-2018	25-Dec-2018	✔
Soil Glass Jar - Unpreserved (EP071-EM) CPT_MW07_181218_0.2, CPT_MW23_181218_0.2,	CPT_MW07_181218_0.5, CPT_MW23_181218_0.5	18-Dec-2018	21-Dec-2018	01-Jan-2019	✔	31-Dec-2018	30-Jan-2019	✔

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) CPT_QC305_171218	17-Dec-2018	----	----	----	27-Dec-2018	17-Dec-2018	✘
Clear Plastic Bottle - Natural (EA005-P) CPT_QC306_181218	18-Dec-2018	----	----	----	27-Dec-2018	18-Dec-2018	✘
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F) CPT_QC305_171218	17-Dec-2018	----	----	----	04-Jan-2019	15-Jun-2019	✔
Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F) CPT_QC306_181218	18-Dec-2018	----	----	----	04-Jan-2019	16-Jun-2019	✔
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) CPT_QC305_171218	17-Dec-2018	----	----	----	04-Jan-2019	14-Jan-2019	✔
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) CPT_QC306_181218	18-Dec-2018	----	----	----	04-Jan-2019	15-Jan-2019	✔
EG050F: Dissolved Hexavalent Chromium							
Clear Plastic Bottle - NaOH Filtered (EG050F) CPT_QC305_171218	17-Dec-2018	----	----	----	27-Dec-2018	14-Jan-2019	✔
Clear Plastic Bottle - NaOH Filtered (EG050F) CPT_QC306_181218	18-Dec-2018	----	----	----	27-Dec-2018	15-Jan-2019	✔
EK026SF: Total CN by Segmented Flow Analyser							
White Plastic Bottle-NaOH (EK026SF) CPT_QC305_171218	17-Dec-2018	----	----	----	21-Dec-2018	31-Dec-2018	✔
White Plastic Bottle-NaOH (EK026SF) CPT_QC306_181218	18-Dec-2018	----	----	----	21-Dec-2018	01-Jan-2019	✔



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK040P: Fluoride by PC Titrator							
Clear Plastic Bottle - Natural (EK040P) CPT_QC305_171218	17-Dec-2018	----	----	----	27-Dec-2018	14-Jan-2019	✓
Clear Plastic Bottle - Natural (EK040P) CPT_QC306_181218	18-Dec-2018	----	----	----	27-Dec-2018	15-Jan-2019	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066) CPT_QC305_171218	17-Dec-2018	21-Dec-2018	24-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
Amber Glass Bottle - Unpreserved (EP066) CPT_QC306_181218	18-Dec-2018	21-Dec-2018	25-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC305_171218	17-Dec-2018	27-Dec-2018	31-Dec-2018	✓	27-Dec-2018	31-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC306_181218	18-Dec-2018	27-Dec-2018	01-Jan-2019	✓	27-Dec-2018	01-Jan-2019	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC305_171218	17-Dec-2018	27-Dec-2018	31-Dec-2018	✓	27-Dec-2018	31-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC306_181218	18-Dec-2018	27-Dec-2018	01-Jan-2019	✓	27-Dec-2018	01-Jan-2019	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC305_171218	17-Dec-2018	27-Dec-2018	31-Dec-2018	✓	27-Dec-2018	31-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC306_181218	18-Dec-2018	27-Dec-2018	01-Jan-2019	✓	27-Dec-2018	01-Jan-2019	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC305_171218	17-Dec-2018	27-Dec-2018	31-Dec-2018	✓	27-Dec-2018	31-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) CPT_QC306_181218	18-Dec-2018	27-Dec-2018	01-Jan-2019	✓	27-Dec-2018	01-Jan-2019	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) CPT_QC305_171218	17-Dec-2018	21-Dec-2018	24-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) CPT_QC306_181218	18-Dec-2018	21-Dec-2018	25-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
EP075A: Phenolic Compounds (Halogenated)							
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC305_171218	17-Dec-2018	21-Dec-2018	24-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC306_181218	18-Dec-2018	21-Dec-2018	25-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075A: Phenolic Compounds (Non-halogenated)								
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC305_171218		17-Dec-2018	21-Dec-2018	24-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC306_181218		18-Dec-2018	21-Dec-2018	25-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
EP075I: Organochlorine Pesticides								
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC305_171218		17-Dec-2018	21-Dec-2018	24-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
Amber Glass Bottle - Unpreserved (EP075-EM) CPT_QC306_181218		18-Dec-2018	21-Dec-2018	25-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071) CPT_QC305_171218		17-Dec-2018	21-Dec-2018	24-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
Amber Glass Bottle - Unpreserved (EP071) CPT_QC306_181218		18-Dec-2018	21-Dec-2018	25-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC305_171218, CPT_QC509_171218	CPT_QC405_171218,	17-Dec-2018	27-Dec-2018	31-Dec-2018	✓	27-Dec-2018	31-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC306_181218, CPT_QC510_181218	CPT_QC406_181218,	18-Dec-2018	27-Dec-2018	01-Jan-2019	✓	27-Dec-2018	01-Jan-2019	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071) CPT_QC305_171218		17-Dec-2018	21-Dec-2018	24-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
Amber Glass Bottle - Unpreserved (EP071) CPT_QC306_181218		18-Dec-2018	21-Dec-2018	25-Dec-2018	✓	31-Dec-2018	30-Jan-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC305_171218, CPT_QC509_171218	CPT_QC405_171218,	17-Dec-2018	27-Dec-2018	31-Dec-2018	✓	27-Dec-2018	31-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC306_181218, CPT_QC510_181218	CPT_QC406_181218,	18-Dec-2018	27-Dec-2018	01-Jan-2019	✓	27-Dec-2018	01-Jan-2019	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC305_171218, CPT_QC509_171218	CPT_QC405_171218,	17-Dec-2018	27-Dec-2018	31-Dec-2018	✓	27-Dec-2018	31-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) CPT_QC306_181218, CPT_QC510_181218	CPT_QC406_181218,	18-Dec-2018	27-Dec-2018	01-Jan-2019	✓	27-Dec-2018	01-Jan-2019	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Chromium Reducible Sulphur	EA026	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	1	8	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	8	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	8	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chromium Reducible Sulphur	EA026	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chromium Reducible Sulphur	EA026	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PCB - VIC EPA 448.3 Screen	EP066-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071-EM	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Method Blanks (MB)



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite B	EG020B-F	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium - Dissolved	EG050F	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	2	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds - Waste Classification	EP075-EM	0	2	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001	SOIL	In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3)
Chromium Reducible Sulphur	EA026	SOIL	In house: Referenced to Sullivan et al (1998) The CRS method converts reduced inorganic sulfur to H ₂ S by CrCl ₂ solution ; the evolved H ₂ S is trapped in a zinc acetate solution as ZnS which is quantified by iodometric titration.
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	SOIL	In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3)
Total Fluoride	EK040T	SOIL	(In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
PCB - VIC EPA 448.3 Screen	EP066-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
TRH - Semivolatile Fraction	EP071-EM	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.



Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds - Ultra-trace	EP074-UT	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)
Volatile Organic Compounds - Ultra-trace - Summations	EP074-UT-SUM	SOIL	Summation of MAHs and VHCs
Semivolatile Organic Compounds - Waste Classification	EP075-EM	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502)
SVOC - Waste Classification (Sums)	EP075-EM-SUM	SOIL	Summations for EP075 (EM variation)
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Metals by ICP-MS - Suite B	EG020B-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium - Dissolved	EG050F	WATER	In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Cyanide by Segmented Flow Analyser	EK026SF	WATER	In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)



Analytical Methods	Method	Matrix	Method Descriptions
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Semivolatile Organic Compounds - Waste Classification	EP075-EM	WATER	In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Preparation Methods	Method	Matrix	Method Descriptions
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH.
pH in soil using a 0.01M CaCl ₂ extract	EA001-PR	SOIL	In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
Total Fluoride	EK040T-PR	SOIL	In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux.
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Methanolic Extraction of Soils - Ultra-trace.	ORG16-UT	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids - VIC EPA Screen	ORG17-EM	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.



Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Separatory Funnel Extraction of Liquids	ORG14-EM	WATER	In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1820497

<p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : ----</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : Crib Point to Pakenham</p> <p>Sampler : SMcC</p>	<p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia 3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 4</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p>
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Dates

<p>Date Samples Received : 18-Dec-2018 16:25</p> <p>Client Requested Due Date : 07-Jan-2019</p>	<p>Issue Date : 20-Dec-2018</p> <p>Scheduled Reporting Date : 07-Jan-2019</p>
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Delivery Details

<p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 2</p> <p>Receipt Detail :</p>	<p>Security Seal : Intact.</p> <p>Temperature : 12.7°C - Ice present</p> <p>No. of samples received / analysed : 30 / 21</p>
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General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA026 Chromium Reducible Sulphur	SOIL - EA055-103 Moisture Content	SOIL - P-16 WRG 621
EM1820497-001	18-Dec-2018 00:00	CPT_MW07_181218_0.2			✓	✓
EM1820497-002	18-Dec-2018 00:00	CPT_MW07_181218_0.5			✓	✓
EM1820497-003	18-Dec-2018 00:00	CPT_MW07_181218_1.0		✓		
EM1820497-004	18-Dec-2018 00:00	CPT_MW07_181218_2.0	✓			
EM1820497-005	18-Dec-2018 00:00	CPT_MW07_181218_3.4	✓			
EM1820497-006	18-Dec-2018 00:00	CPT_MW07_181218_4.0		✓		
EM1820497-007	18-Dec-2018 00:00	CPT_MW23_181218_0.2			✓	✓
EM1820497-008	18-Dec-2018 00:00	CPT_MW23_181218_0.5			✓	✓
EM1820497-009	18-Dec-2018 00:00	CPT_MW23_181218_1.0		✓		
EM1820497-010	18-Dec-2018 00:00	CPT_MW23_181218_2.0	✓			
EM1820497-011	18-Dec-2018 00:00	CPT_MW23_181218_3.0		✓		
EM1820497-012	18-Dec-2018 00:00	CPT_MW23_181218_4.0	✓			
EM1820497-016	17-Dec-2018 00:00	CPT_MW21_171218_0.2			✓	✓
EM1820497-017	17-Dec-2018 00:00	CPT_MW21_171218_0.5		✓		
EM1820497-018	17-Dec-2018 00:00	CPT_MW21_171218_1.0	✓			
EM1820497-019	17-Dec-2018 00:00	CPT_MW21_171218_2.0			✓	✓
EM1820497-020	17-Dec-2018 00:00	CPT_MW21_171218_3.0		✓		
EM1820497-021	17-Dec-2018 00:00	CPT_MW21_171218_4.0	✓			
EM1820497-022	17-Dec-2018 00:00	CPT_MW09_171218_0.2			✓	✓
EM1820497-023	17-Dec-2018 00:00	CPT_MW09_171218_0.5		✓	✓	✓
EM1820497-024	17-Dec-2018 00:00	CPT_MW09_171218_1.0	✓			
EM1820497-025	17-Dec-2018 00:00	CPT_MW09_171218_2.0	✓			
EM1820497-026	17-Dec-2018 00:00	CPT_MW09_171218_3.0		✓		
EM1820497-027	17-Dec-2018 00:00	CPT_MW09_171218_4.0	✓			



Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - 448.3 Water VIC EPA IWRG621 - Water Equivalent Suite	WATER - W-18 TRH(C6 - C9)/BTEXN
EM1820497-013	18-Dec-2018 00:00	CPT_QC306_181218	✓	
EM1820497-014	18-Dec-2018 00:00	CPT_QC406_181218		✓
EM1820497-015	18-Dec-2018 00:00	CPT_QC510_181218		✓
EM1820497-028	17-Dec-2018 00:00	CPT_QC305_171218	✓	
EM1820497-029	17-Dec-2018 00:00	CPT_QC405_171218		✓
EM1820497-030	17-Dec-2018 00:00	CPT_QC509_171218		✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

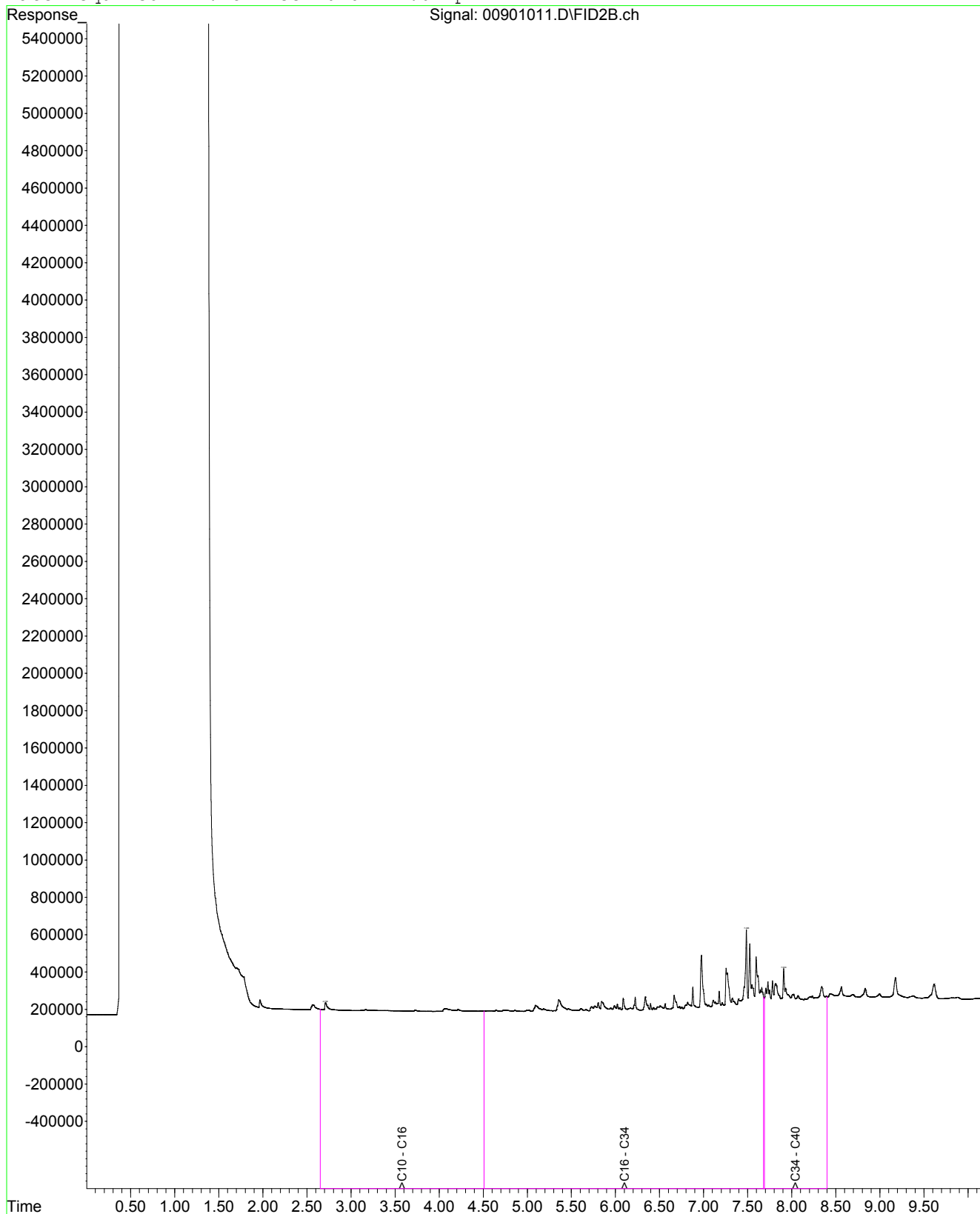
Method	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
Client Sample ID(s)				Date	Evaluation	Date	Evaluation
EA026: Chromium Reducible Sulphur							
CPT_MW09_171218	Snap Lock Bag	18-Dec-2018	18-Mar-2019	18-Dec-2018	✔	19-Dec-2018	✖
CPT_MW09_171218	Snap Lock Bag	18-Dec-2018	18-Mar-2019	18-Dec-2018	✔	19-Dec-2018	✖
CPT_MW21_171218	Snap Lock Bag	18-Dec-2018	18-Mar-2019	18-Dec-2018	✔	19-Dec-2018	✖
CPT_MW21_171218	Snap Lock Bag	18-Dec-2018	18-Mar-2019	18-Dec-2018	✔	19-Dec-2018	✖

Matrix: **WATER**

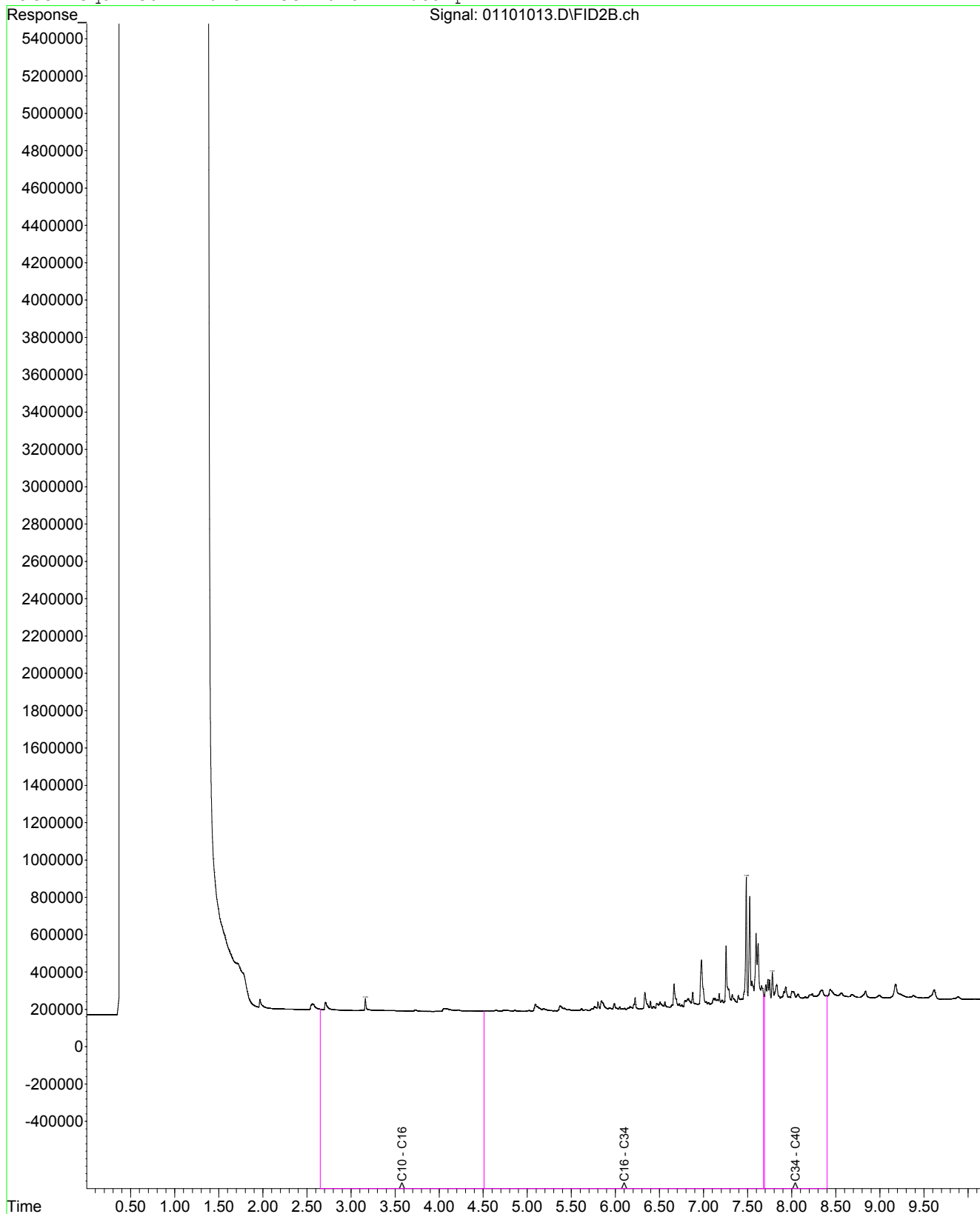
Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
Client Sample ID(s)				Date	Evaluation	Date	Evaluation
EA005-P: pH by PC Titrator							
CPT_QC305_171218	Clear Plastic Bottle - Natural	----	17-Dec-2018	18-Dec-2018	✖	19-Dec-2018	✖
CPT_QC306_181218	Clear Plastic Bottle - Natural	----	18-Dec-2018	18-Dec-2018	✔	19-Dec-2018	✖

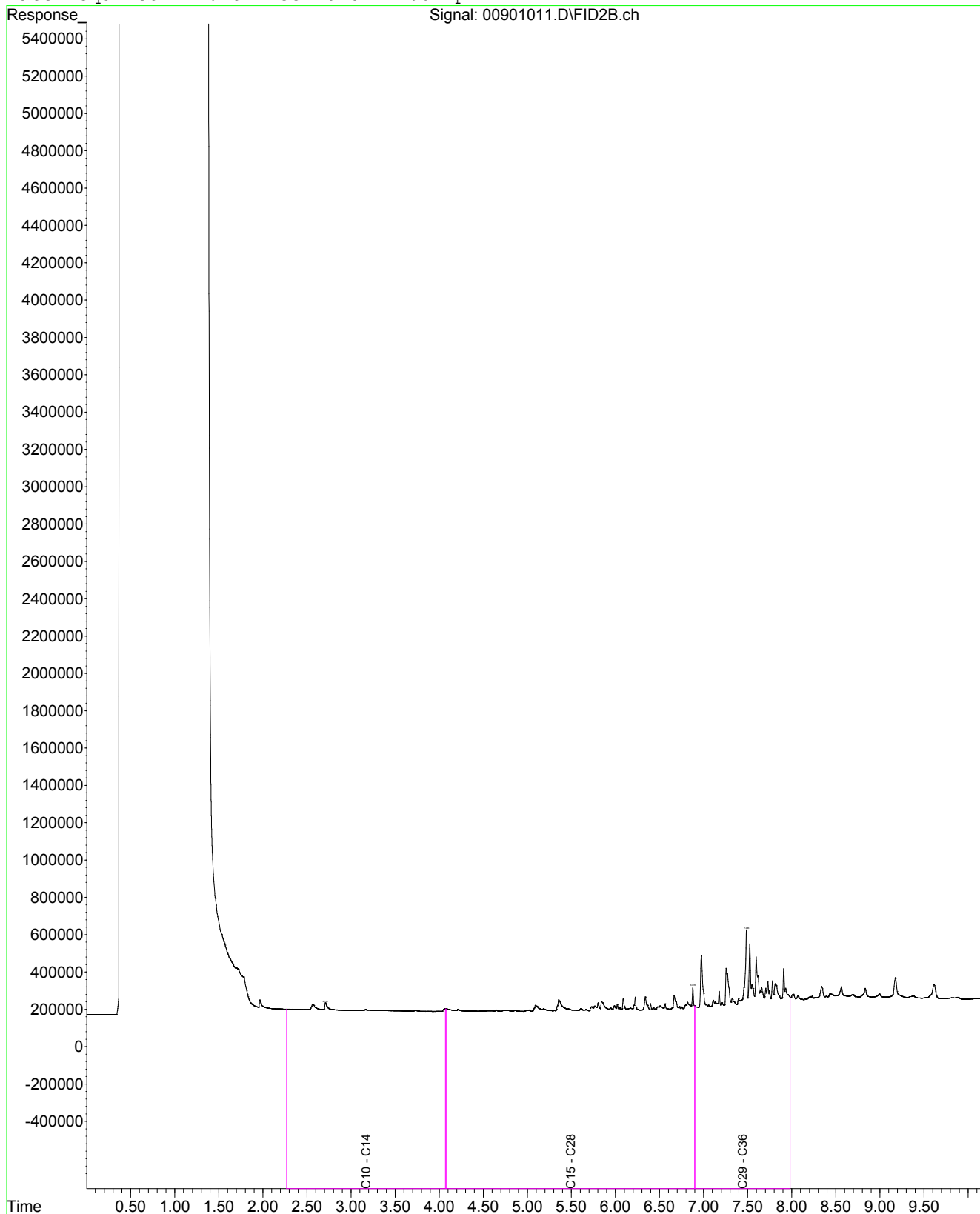
Fraction Scheme : NEPM Draft HIL
Data File : 00901011.D
Laboratory Number: EM1820497-016
Sample ID : CPT_MW21_171218_0.2
Date Acquired : 31 Dec 2018 2:07 pm



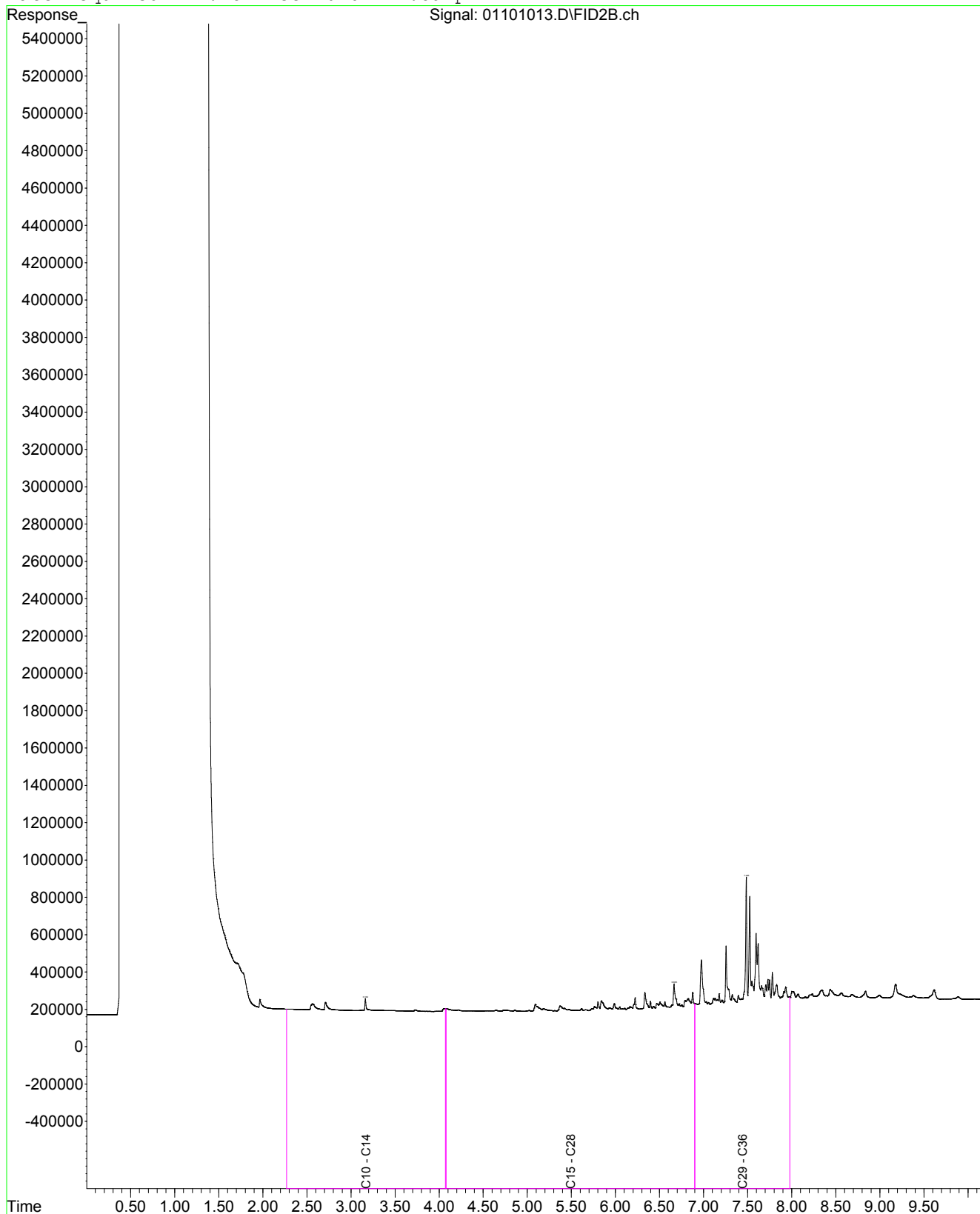
Fraction Scheme : NEPM Draft HIL
Data File : 01101013.D
Laboratory Number: EM1820497-022
Sample ID : CPT_MW09_171218_0.2
Date Acquired : 31 Dec 2018 2:39 pm



Fraction Scheme : Standard
Data File : 00901011.D
Laboratory Number: EM1820497-016
Sample ID : CPT_MW21_171218_0.2
Date Acquired : 31 Dec 2018 2:07 pm



Fraction Scheme : Standard
Data File : 01101013.D
Laboratory Number: EM1820497-022
Sample ID : CPT_MW09_171218_0.2
Date Acquired : 31 Dec 2018 2:39 pm



Client / Client code: AECOMAU
Project: 60582811, GIJPP Groundwater Study
Project Manager: [REDACTED]
Date /time sample rec: Tuesday, 4 December 2018
Date/time Instructions rec: 18/12/2018 10:10
Due date: Standard
Due date surcharge:

CS Contact:
Additional Information:

[illegible]

Telephone • +61-3-8549 9600

From: [REDACTED]@aecom.com>
Sent: Tuesday, 18 December 2018 10:10 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: Additional SPOCAS/CRS analysis: EM1819706, EM1819548, EM1819563

Follow Up Flag: Follow up
Flag Status: Flagged

Hi [REDACTED]

Can you please analyse the following frozen samples that are currently on hold for SPOCAS/CRS? At standard TAT thanks!

Sample ID	ALS Batch Number	SPOCAS (EA029)	Chromium Reduced Sulfur (EA033)
MS CPT_MW01_061218_0.5	EM1819706 - 8		X
HS CPT_MW01_061218_3.5	EM1819706 - 11		X
MS CPT_MW22_061218_0.2	EM1819706 - 1		X
HS CPT_MW22_061218_1.0	EM1819706 - 3		X
CPT_MW05_041218_1.0	EM1819548 - 3		X
CPT_MW05_041218_3.0	EM1819548 - 5		X
CPT_MW18_041218_0.2	EM1819548 - 7	X	
CPT_MW18_041218_2.0	EM1819548 - 10	X	
CPT_MW19_041218_0.2	EM1819548 - 13		X
CPT_MW19_041218_1.0	EM1819548 - 15		X
CPT_MW14_031218_0.5	EM1819563 - 2		X
CPT_MW14_031218_2.0	EM1819563 - 5		X

Regards,

Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

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aecom.com

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CERTIFICATE OF ANALYSIS

Work Order : **EM1820551**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60582811
Order number : 60582811
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : EN/096/18
No. of samples received : 12
No. of samples analysed : 12

Page : 1 of 6
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 04-Dec-2018 09:25
Date Analysis Commenced : 31-Dec-2018
Issue Date : 07-Jan-2019 12:43



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
[REDACTED]	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD



□□□ □ □□□ □□□□

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- This is a rebatch of EM1819706, EM1819548 and EM1819563.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO_3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO_3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m³ in-situ soil, multiply reported results x wet bulk density of soil in t/m³.



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT_MW01_061218_ 0.5	CPT_MW01_061218_ 3.0	CPT_MW22_061218_ 0.2	CPT_MW22_061218_ 1.0	CPT_MW05_041218_ 1.0
Client sampling date / time				06-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 00:00	04-Dec-2018 00:00
Compound	CAS Number	LOR	Unit	EM1820551-001	EM1820551-002	EM1820551-003	EM1820551-004	EM1820551-005
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	5.4	4.5	5.2	5.5	6.2
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	13	30	15	7	<2
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.02	0.05	0.02	<0.02	<0.02
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	0.008	<0.005	0.013	<0.005	0.008
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	<10	<10	<10
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S	0.03	0.05	0.04	<0.02	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	18	30	24	<10	<10
Liming Rate	----	1	kg CaCO3/t	1	2	2	<1	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.03	0.05	0.04	<0.02	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	18	30	24	<10	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	1	2	2	<1	<1



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW05_041218_ 3.0	CPT_MW18_041218_ 0.2	CPT_MW18_041218_ 2.0	CPT_MW19_041218_ 0.2	CPT_MW19_041218_ 1.0
Client sampling date / time					04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820551-006	EM1820551-007	EM1820551-008	EM1820551-009	EM1820551-010
				Result	Result	Result	Result	Result	Result
EA029-A: pH Measurements									
pH KCl (23A)	----	0.1	pH Unit	----	4.4	4.7	----	----	----
pH OX (23B)	----	0.1	pH Unit	----	4.2	5.4	----	----	----
EA029-B: Acidity Trail									
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	69	24	----	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	211	26	----	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	141	2	----	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	0.111	0.038	----	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	0.338	0.042	----	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	0.227	<0.020	----	----	----
EA029-C: Sulfur Trail									
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	<0.020	<0.020	----	----	----
Peroxide Sulfur (23De)	----	0.020	% S	----	0.049	<0.020	----	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	0.049	<0.020	----	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	30	<10	----	----	----
EA029-D: Calcium Values									
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	0.238	0.158	----	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	0.242	0.163	----	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	<0.020	<0.020	----	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	<10	<10	----	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	<0.020	<0.020	----	----	----
EA029-E: Magnesium Values									
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	0.158	0.191	----	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	0.167	0.195	----	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	<0.020	<0.020	----	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	<10	<10	----	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	<0.020	<0.020	----	----	----
EA029-G: Retained Acidity									
HCl Extractable Sulfur (20Be)	----	0.020	% S	----	<0.020	----	----	----	----
Net Acid Soluble Sulfur (20Je)	----	0.020	% S	----	<0.020	----	----	----	----
acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	----	<10	----	----	----	----
sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.020	% pyrite S	----	<0.020	----	----	----	----



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW05_041218_ 3.0	CPT_MW18_041218_ 0.2	CPT_MW18_041218_ 2.0	CPT_MW19_041218_ 0.2	CPT_MW19_041218_ 1.0
Client sampling date / time					04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00	04-Dec-2018 00:00
Compound	CAS Number	LOR	Unit		EM1820551-006	EM1820551-007	EM1820551-008	EM1820551-009	EM1820551-010
				Result	Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	----	1.5	1.5	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	0.16	0.04	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	100	24	----	----	----
Liming Rate	----	1	kg CaCO3/t	----	7	2	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	0.16	0.04	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	100	24	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	7	2	----	----	----
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit	5.8	----	----	4.4	4.5	
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	<2	----	----	61	34	
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	0.10	0.06	
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	----	----	0.012	0.007	
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	----	<10	<10	
EA033-D: Retained Acidity									
KCl Extractable Sulfur (23Ce)	----	0.02	% S	----	----	----	<0.02	----	
HCl Extractable Sulfur (20Be)	----	0.02	% S	----	----	----	0.02	----	
Net Acid Soluble Sulfur (20Je)	----	0.02	% S	----	----	----	0.02	----	
acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	----	----	----	<10	----	
sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	----	----	----	<0.02	----	
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	1.5	----	----	1.5	1.5	
Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	0.12	0.06	
Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	78	39	
Liming Rate	----	1	kg CaCO3/t	<1	----	----	6	3	
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	0.12	0.06	
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	78	39	
Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	6	3	



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW14_031218_ 0.5	CPT_MW14_031218_ 2.0	----	----	----
Client sampling date / time					03-Dec-2018 00:00	03-Dec-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EM1820551-011	EM1820551-012	-----	-----	-----
				Result	Result		----	----	----
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit		5.1	5.8	----	----	----
Titrateable Actual Acidity (23F)	----	2	mole H+ / t		11	4	----	----	----
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S		<0.02	<0.02	----	----	----
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S		0.010	<0.005	----	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t		<10	<10	----	----	----
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-		1.5	1.5	----	----	----
Net Acidity (sulfur units)	----	0.02	% S		0.03	<0.02	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t		17	<10	----	----	----
Liming Rate	----	1	kg CaCO3/t		1	<1	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		0.03	<0.02	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		17	<10	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t		1	<1	----	----	----



Environmental

QUALITY CONTROL REPORT

Work Order	: EM1820551	Page	: 1 of 5
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60582811	Date Samples Received	: 04-Dec-2018
Order number	: 60582811	Date Analysis Commenced	: 31-Dec-2018
C-O-C number	: ----	Issue Date	: 07-Jan-2019
Sampler	: ----		
Site	: ----		
Quote number	: EN/096/18		
No. of samples received	: 12		
No. of samples analysed	: 12		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]

Senior Acid Sulfate Soil Chemist

Brisbane Acid Sulphate Soils, Stafford, QLD

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA029-A: pH Measurements (QC Lot: 2115135)									
EB1831588-007	Anonymous	EA029: pH KCl (23A)	----	0.1	pH Unit	6.2	6.3	1.60	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	7.0	7.0	0.00	0% - 20%
EA029-B: Acidity Trail (QC Lot: 2115135)									
EB1831588-007	Anonymous	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	<2	0.00	No Limit
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	<2	0.00	No Limit
EA029-C: Sulfur Trail (QC Lot: 2115135)									
EB1831588-007	Anonymous	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-D: Calcium Values (QC Lot: 2115135)									
EB1831588-007	Anonymous	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.154	0.165	6.82	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	0.156	0.166	5.94	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-E: Magnesium Values (QC Lot: 2115135)									



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA029-E: Magnesium Values (QC Lot: 2115135) - continued									
EB1831588-007	Anonymous	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	0.042	0.046	7.83	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	0.044	0.047	7.06	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-H: Acid Base Accounting (QC Lot: 2115135)									
EB1831588-007	Anonymous	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA033-A: Actual Acidity (QC Lot: 2115128)									
EM1820551-001	CPT_MW01_061218_0.5	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.02	0.02	0.00	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	13	13	0.00	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	5.4	5.4	0.00	0% - 20%
EP1814886-001	Anonymous	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.00	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	0.00	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	9.1	9.2	1.09	0% - 20%
EA033-B: Potential Acidity (QC Lot: 2115128)									
EM1820551-001	CPT_MW01_061218_0.5	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.008	0.008	0.00	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EP1814886-001	Anonymous	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.010	0.009	0.00	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.00	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EA029-A: pH Measurements (QCLot: 2115135)								
EA029: pH KCl (23A)	----	0.1	pH Unit	<0.1	4.5 pH Unit	97.8	70	130
EA029: pH OX (23B)	----	0.1	pH Unit	<0.1	4.5 pH Unit	97.8	70	130
EA029-B: Acidity Trail (QCLot: 2115135)								
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	24.6 mole H+ / t	91.1	70	130
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	29.1 mole H+ / t	117	70	130
EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	----	----	----	----
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029-C: Sulfur Trail (QCLot: 2115135)								
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.052 % S	96.0	70	130
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.145 % S	107	70	130
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-D: Calcium Values (QCLot: 2115135)								
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.151 % Ca	107	70	130
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.296 % Ca	99.6	70	130
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values (QCLot: 2115135)								
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.176 % Mg	107	70	130
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.175 % Mg	108	70	130
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----
EA029-G: Retained Acidity (QCLot: 2115135)								
EA029: Net Acid Soluble Sulfur (20Je)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: HCl Extractable Sulfur (20Be)	----	0.02	% S	<0.020	0.027 % S	107	70	130
EA029-H: Acid Base Accounting (QCLot: 2115135)								
EA029: ANC Fineness Factor	----	0.5	-	<0.5	----	----	----	----



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike	Spike Recovery (%)	Recovery Limits (%)	
					Concentration	LCS	Low	High
EA029-H: Acid Base Accounting (QCLot: 2115135) - continued								
EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----
EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----
EA033-A: Actual Acidity (QCLot: 2115128)								
EA033: pH KCl (23A)	----	----	pH Unit	----	4.5 pH Unit	97.8	70	130
EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	24.6 mole H+ / t	94.8	70	130
EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033-B: Potential Acidity (QCLot: 2115128)								
EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	0.23483 % S	95.9	70	130
EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	----	----	----
EA033-D: Retained Acidity (QCLot: 2115128)								
EA033: Net Acid Soluble Sulfur (20Je)	----	0.02	% S	<0.02	----	----	----	----
EA033: acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	<10	----	----	----	----
EA033: sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.02	0.052 % S	95.9	70	130
EA033: HCl Extractable Sulfur (20Be)	----	0.02	% S	<0.02	0.027 % S	111	70	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1820551	Page	: 1 of 6
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Telephone	: +6138549 9645
Project	: 60582811	Date Samples Received	: 04-Dec-2018
Site	: ----	Issue Date	: 07-Jan-2019
Sampler	: ----	No. of samples received	: 12
Order number	: 60582811	No. of samples analysed	: 12

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA029-A: pH Measurements								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW18_041218_0.2, CPT_MW18_041218_2.0		04-Dec-2018	31-Dec-2018	29-Aug-2021	✓	31-Dec-2018	31-Mar-2019	✓
EA029-B: Acidity Trail								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW18_041218_0.2, CPT_MW18_041218_2.0		04-Dec-2018	31-Dec-2018	29-Aug-2021	✓	31-Dec-2018	31-Mar-2019	✓
EA029-C: Sulfur Trail								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW18_041218_0.2, CPT_MW18_041218_2.0		04-Dec-2018	31-Dec-2018	29-Aug-2021	✓	31-Dec-2018	31-Mar-2019	✓
EA029-D: Calcium Values								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW18_041218_0.2, CPT_MW18_041218_2.0		04-Dec-2018	31-Dec-2018	29-Aug-2021	✓	31-Dec-2018	31-Mar-2019	✓
EA029-E: Magnesium Values								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW18_041218_0.2, CPT_MW18_041218_2.0		04-Dec-2018	31-Dec-2018	29-Aug-2021	✓	31-Dec-2018	31-Mar-2019	✓
EA029-F: Excess Acid Neutralising Capacity								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW18_041218_0.2, CPT_MW18_041218_2.0		04-Dec-2018	31-Dec-2018	29-Aug-2021	✓	31-Dec-2018	31-Mar-2019	✓
EA029-G: Retained Acidity								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW18_041218_0.2, CPT_MW18_041218_2.0		04-Dec-2018	31-Dec-2018	29-Aug-2021	✓	31-Dec-2018	31-Mar-2019	✓
EA029-H: Acid Base Accounting								
Snap Lock Bag - frozen on receipt at ALS (EA029) CPT_MW18_041218_0.2, CPT_MW18_041218_2.0		04-Dec-2018	31-Dec-2018	29-Aug-2021	✓	31-Dec-2018	31-Mar-2019	✓



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-A: Actual Acidity								
80* dried soil (EA033) CPT_MW01_061218_0.5, CPT_MW22_061218_0.2,	CPT_MW01_061218_3.0, CPT_MW22_061218_1.0	06-Dec-2018	31-Dec-2018	06-Dec-2019	✓	31-Dec-2018	31-Mar-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA033) CPT_MW14_031218_0.5,	CPT_MW14_031218_2.0	03-Dec-2018	31-Dec-2018	03-Dec-2019	✓	31-Dec-2018	31-Mar-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA033) CPT_MW05_041218_1.0, CPT_MW19_041218_0.2,	CPT_MW05_041218_3.0, CPT_MW19_041218_1.0	04-Dec-2018	31-Dec-2018	04-Dec-2019	✓	31-Dec-2018	31-Mar-2019	✓
EA033-B: Potential Acidity								
80* dried soil (EA033) CPT_MW01_061218_0.5, CPT_MW22_061218_0.2,	CPT_MW01_061218_3.0, CPT_MW22_061218_1.0	06-Dec-2018	31-Dec-2018	06-Dec-2019	✓	31-Dec-2018	31-Mar-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA033) CPT_MW14_031218_0.5,	CPT_MW14_031218_2.0	03-Dec-2018	31-Dec-2018	03-Dec-2019	✓	31-Dec-2018	31-Mar-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA033) CPT_MW05_041218_1.0, CPT_MW19_041218_0.2,	CPT_MW05_041218_3.0, CPT_MW19_041218_1.0	04-Dec-2018	31-Dec-2018	04-Dec-2019	✓	31-Dec-2018	31-Mar-2019	✓
EA033-C: Acid Neutralising Capacity								
80* dried soil (EA033) CPT_MW01_061218_0.5, CPT_MW22_061218_0.2,	CPT_MW01_061218_3.0, CPT_MW22_061218_1.0	06-Dec-2018	31-Dec-2018	06-Dec-2019	✓	31-Dec-2018	31-Mar-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA033) CPT_MW14_031218_0.5,	CPT_MW14_031218_2.0	03-Dec-2018	31-Dec-2018	03-Dec-2019	✓	31-Dec-2018	31-Mar-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA033) CPT_MW05_041218_1.0, CPT_MW19_041218_0.2,	CPT_MW05_041218_3.0, CPT_MW19_041218_1.0	04-Dec-2018	31-Dec-2018	04-Dec-2019	✓	31-Dec-2018	31-Mar-2019	✓
EA033-D: Retained Acidity								
80* dried soil (EA033) CPT_MW01_061218_0.5, CPT_MW22_061218_0.2,	CPT_MW01_061218_3.0, CPT_MW22_061218_1.0	06-Dec-2018	31-Dec-2018	06-Dec-2019	✓	31-Dec-2018	31-Mar-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA033) CPT_MW14_031218_0.5,	CPT_MW14_031218_2.0	03-Dec-2018	31-Dec-2018	03-Dec-2019	✓	31-Dec-2018	31-Mar-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA033) CPT_MW05_041218_1.0, CPT_MW19_041218_0.2,	CPT_MW05_041218_3.0, CPT_MW19_041218_1.0	04-Dec-2018	31-Dec-2018	04-Dec-2019	✓	31-Dec-2018	31-Mar-2019	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-E: Acid Base Accounting								
80* dried soil (EA033)								
CPT_MW01_061218_0.5, CPT_MW22_061218_0.2,	CPT_MW01_061218_3.0, CPT_MW22_061218_1.0	06-Dec-2018	31-Dec-2018	06-Dec-2019	✔	31-Dec-2018	31-Mar-2019	✔
Snap Lock Bag - frozen on receipt at ALS (EA033)								
CPT_MW14_031218_0.5,	CPT_MW14_031218_2.0	03-Dec-2018	31-Dec-2018	03-Dec-2019	✔	31-Dec-2018	31-Mar-2019	✔
Snap Lock Bag - frozen on receipt at ALS (EA033)								
CPT_MW05_041218_1.0, CPT_MW19_041218_0.2,	CPT_MW05_041218_3.0, CPT_MW19_041218_1.0	04-Dec-2018	31-Dec-2018	04-Dec-2019	✔	31-Dec-2018	31-Mar-2019	✔



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Chromium Suite for Acid Sulphate Soils	EA033	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	4	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chromium Suite for Acid Sulphate Soils	EA033	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chromium Suite for Acid Sulphate Soils	EA033	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	SOIL	In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
Chromium Suite for Acid Sulphate Soils	EA033	SOIL	In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
Preparation Methods	Method	Matrix	Method Descriptions
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house

Client / Client code: AECOMAU
Project: 60582811 GUJPP Groundwater Study
Project Manager: [REDACTED]
Date /time sample rec: Wednesday, 5 December 2018
Date/time Instructions rec: 7/01/2019 15:50
Due date: Standard
Due date surcharge:

MEFM (47/3)

Approved Date: 01/02/2016

[illegible]

[REDACTED]

From: [REDACTED]@aecom.com>
Sent: Monday, 7 January 2019 3:50 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: GIJPP - Chromium Reduced Sulphur

Follow Up Flag: Follow up
Flag Status: Flagged

Hi [REDACTED]

I've just realised that the lab reports to date stated that for Chromium Reduced Sulphur, code EA026 was used instead of the complete suite EA033. Any chance we could fix this?

[REDACTED]
Senior Environmental Engineer
[REDACTED]

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

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SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900114

<p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60582811</p> <p>Order number : 60582811</p> <p>C-O-C number : ----</p> <p>Site : GIJPP Groundwater Study</p> <p>Sampler : :</p>	<p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia 3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 3</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p>
---	--

Dates

<p>Date Samples Received : 05-Dec-2018 17:25</p> <p>Client Requested Due Date : 15-Jan-2019</p>	<p>Issue Date : 08-Jan-2019</p> <p>Scheduled Reporting Date : 15-Jan-2019</p>
---	--

Delivery Details

<p>Mode of Delivery : Samples On Hand</p> <p>No. of coolers/boxes : ----</p> <p>Receipt Detail : :</p>	<p>Security Seal : Not Available</p> <p>Temperature : ----</p> <p>No. of samples received / analysed : 16 / 16</p>
---	---

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- This is a rebatch of EM1819646, EM1819706 and EM1820497.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

☐ **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA033 Chromium Suite for Acid Sulphate Soils
EM1900114-001	05-Dec-2018 00:00	CPT_MW02_051218_1.0	☐
EM1900114-002	05-Dec-2018 00:00	CPT_MW02_051218_2.0	☐
EM1900114-003	05-Dec-2018 00:00	CPT_MW03_051218_1.0	☐
EM1900114-004	05-Dec-2018 00:00	CPT_MW03_051218_3.0	☐
EM1900114-005	05-Dec-2018 00:00	CPT_MW04_051218_0.5	☐
EM1900114-006	05-Dec-2018 00:00	CPT_MW04_051218_2.0	☐
EM1900114-007	06-Dec-2018 00:00	CPT_MW01_061218_0.5	☐
EM1900114-008	06-Dec-2018 00:00	CPT_MW01_061218_3.0	☐
EM1900114-009	18-Dec-2018 00:00	CPT_MW07_181218_1.0	☐
EM1900114-010	18-Dec-2018 00:00	CPT_MW07_181218_4.0	☐
EM1900114-011	18-Dec-2018 00:00	CPT_MW23_181218_1.0	☐
EM1900114-012	18-Dec-2018 00:00	CPT_MW23_181218_3.0	☐
EM1900114-013	17-Dec-2018 00:00	CPT_MW21_171218_0.5	☐
EM1900114-014	17-Dec-2018 00:00	CPT_MW21_171218_3.0	☐
EM1900114-015	17-Dec-2018 00:00	CPT_MW09_171218_0.5	☐
EM1900114-016	17-Dec-2018 00:00	CPT_MW09_171218_3.0	☐

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.



Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

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- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

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- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

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CERTIFICATE OF ANALYSIS

Work Order : **EM1900114**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60582811
Order number : 60582811
C-O-C number : ----
Sampler : ----
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 16
No. of samples analysed : 16

Page : 1 of 6
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 05-Dec-2018 17:25
Date Analysis Commenced : 11-Jan-2019
Issue Date : 14-Jan-2019 11:16



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
[REDACTED]	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD



□□□ □ □□□ □□□□

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- This is a rebatch of EM1819646, EM1819706 and EM1820497.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID				
				CPT_MW02_051218_1.0	CPT_MW02_051218_2.0	CPT_MW03_051218_1.0	CPT_MW03_051218_3.0	CPT_MW04_051218_0.5
Client sampling date / time				05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00	05-Dec-2018 00:00
Compound	CAS Number	LOR	Unit	EM1900114-001	EM1900114-002	EM1900114-003	EM1900114-004	EM1900114-005
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	4.4	4.6	6.1	5.8	5.0
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	34	18	<2	3	27
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.05	0.03	<0.02	<0.02	0.04
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	0.012	0.007	0.006	<0.005	0.006
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	<10	<10	<10
EA033-D: Retained Acidity								
KCl Extractable Sulfur (23Ce)	----	0.02	% S	0.04	----	----	----	----
HCl Extractable Sulfur (20Be)	----	0.02	% S	0.04	----	----	----	----
Net Acid Soluble Sulfur (20Je)	----	0.02	% S	<0.02	----	----	----	----
acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	<10	----	----	----	----
sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S	0.07	0.04	<0.02	<0.02	0.05
Net Acidity (acidity units)	----	10	mole H+ / t	43	23	<10	<10	31
Liming Rate	----	1	kg CaCO3/t	3	2	<1	<1	2
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.07	0.04	<0.02	<0.02	0.05
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	43	23	<10	<10	31
Liming Rate excluding ANC	----	1	kg CaCO3/t	3	2	<1	<1	2



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT_MW04_051218_ 2.0	CPT_MW01_061218_ 0.5	CPT_MW01_061218_ 3.0	CPT_MW07_181218_ 1.0	CPT_MW07_181218_ 4.0
Client sampling date / time				05-Dec-2018 00:00	06-Dec-2018 00:00	06-Dec-2018 00:00	18-Dec-2018 00:00	18-Dec-2018 00:00
Compound	CAS Number	LOR	Unit	EM1900114-006	EM1900114-007	EM1900114-008	EM1900114-009	EM1900114-010
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	5.5	5.5	4.4	5.3	6.0
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	12	13	37	14	3
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	0.02	0.06	0.02	<0.02
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	0.006	<0.005	<0.005	<0.005
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	<10	<10	<10
EA033-D: Retained Acidity								
KCl Extractable Sulfur (23Ce)	----	0.02	% S	----	----	0.07	----	----
HCl Extractable Sulfur (20Be)	----	0.02	% S	----	----	0.09	----	----
Net Acid Soluble Sulfur (20Je)	----	0.02	% S	----	----	<0.02	----	----
acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	----	----	<10	----	----
sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	----	----	<0.02	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S	<0.02	0.03	0.07	0.02	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	12	17	46	14	<10
Liming Rate	----	1	kg CaCO3/t	<1	1	3	1	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	0.03	0.07	0.02	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	12	17	46	14	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	1	3	1	<1



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT_MW23_181218_ 1.0	CPT_MW23_181218_ 3.0	CPT_MW21_171218_ 0.5	CPT_MW21_171218_ 3.0	CPT_MW09_171218_ 0.5
Client sampling date / time				18-Dec-2018 00:00	18-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00	17-Dec-2018 00:00
Compound	CAS Number	LOR	Unit	EM1900114-011	EM1900114-012	EM1900114-013	EM1900114-014	EM1900114-015
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	5.8	5.4	5.7	5.4	6.1
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	4	4	4	6	<2
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	<0.02	<0.02	<0.02
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	<0.005	0.006	<0.005	<0.005
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	<10	<10	<10
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	<0.02	<0.02	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	<10	<10	<10
Liming Rate	----	1	kg CaCO3/t	<1	<1	<1	<1	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	<0.02	<0.02	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	<10	<10	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	<1	<1	<1



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW09_171218_3.0	----	----	----	----
				Client sampling date / time	17-Dec-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1900114-016	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit	5.2	----	----	----	----	----
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	9	----	----	----	----	----
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	----	----	----
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S	0.168	----	----	----	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	105	----	----	----	----	----
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	1.5	----	----	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	0.18	----	----	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	114	----	----	----	----	----
Liming Rate	----	1	kg CaCO3/t	8	----	----	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.18	----	----	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	114	----	----	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	8	----	----	----	----	----



Environmental

QUALITY CONTROL REPORT

Work Order	: EM1900114	Page	: 1 of 3
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 60582811	Date Samples Received	: 05-Dec-2018
Order number	: 60582811	Date Analysis Commenced	: 11-Jan-2019
C-O-C number	: ----	Issue Date	: 14-Jan-2019
Sampler	: ----		
Site	: GIJPP Groundwater Study		
Quote number	: EN/096/18		
No. of samples received	: 16		
No. of samples analysed	: 16		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]

Senior Acid Sulfate Soil Chemist

Brisbane Acid Sulphate Soils, Stafford, QLD



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA033-A: Actual Acidity (QC Lot: 2129714)									
EM1900114-001	CPT_MW02_051218_1.0	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.05	0.05	0.00	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	34	34	0.00	0% - 50%
		EA033: pH KCl (23A)	----	0.1	pH Unit	4.4	4.4	0.00	0% - 20%
EM1900114-011	CPT_MW23_181218_1.0	EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	0.00	No Limit
		EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	4	3	27.6	No Limit
		EA033: pH KCl (23A)	----	0.1	pH Unit	5.8	5.9	1.71	0% - 20%
EA033-B: Potential Acidity (QC Lot: 2129714)									
EM1900114-001	CPT_MW02_051218_1.0	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	0.012	0.011	13.8	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EM1900114-011	CPT_MW23_181218_1.0	EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	<0.005	0.00	No Limit
		EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA033-D: Retained Acidity (QC Lot: 2129714)									
EM1900114-001	CPT_MW02_051218_1.0	EA033: sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	<0.02	<0.02	0.00	No Limit
		EA033: Net Acid Soluble Sulfur (20Je)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA033: KCl Extractable Sulfur (23Ce)	----	0.02	% S	0.04	0.04	0.00	No Limit
		EA033: HCl Extractable Sulfur (20Be)	----	0.02	% S	0.04	0.04	0.00	No Limit
		EA033: acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	<10	<10	0.00	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) LowHigh	
Method: Compound	CAS Number	LOR	Unit	Result				
EA033-A: Actual Acidity (QCLot: 2129714)								
EA033: pH KCl (23A)	----	----	pH Unit	----	4.5 pH Unit	95.6	70	130
EA033: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	24.6 mole H+ / t	98.5	70	130
EA033: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033-B: Potential Acidity (QCLot: 2129714)								
EA033: Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	0.23483 % S	96.2	70	130
EA033: acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	----	----	----
EA033-D: Retained Acidity (QCLot: 2129714)								
EA033: Net Acid Soluble Sulfur (20Je)	----	0.02	% S	<0.02	----	----	----	----
EA033: acidity - Net Acid Soluble Sulfur (a-20J)	----	10	mole H+ / t	<10	----	----	----	----
EA033: sulfidic - Net Acid Soluble Sulfur (s-20J)	----	0.02	% pyrite S	<0.02	----	----	----	----
EA033: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.02	0.052 % S	95.9	70	130
EA033: HCl Extractable Sulfur (20Be)	----	0.02	% S	<0.02	0.027 % S	107	70	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1900114	Page	: 1 of 5
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Telephone	: +6138549 9645
Project	: 60582811	Date Samples Received	: 05-Dec-2018
Site	: GIJPP Groundwater Study	Issue Date	: 14-Jan-2019
Sampler	: ----	No. of samples received	: 16
Order number	: 60582811	No. of samples analysed	: 16

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA033-A: Actual Acidity								
Snap Lock Bag - frozen (EA033) CPT_MW02_051218_1.0, CPT_MW03_051218_1.0, CPT_MW04_051218_0.5,	CPT_MW02_051218_2.0, CPT_MW03_051218_3.0, CPT_MW04_051218_2.0	05-Dec-2018	11-Jan-2019	05-Dec-2019	✔	11-Jan-2019	11-Apr-2019	✔
Snap Lock Bag - frozen (EA033) CPT_MW01_061218_0.5,	CPT_MW01_061218_3.0	06-Dec-2018	11-Jan-2019	06-Dec-2019	✔	11-Jan-2019	11-Apr-2019	✔
Snap Lock Bag - frozen (EA033) CPT_MW21_171218_0.5, CPT_MW09_171218_0.5,	CPT_MW21_171218_3.0, CPT_MW09_171218_3.0	17-Dec-2018	11-Jan-2019	17-Dec-2019	✔	11-Jan-2019	11-Apr-2019	✔
Snap Lock Bag - frozen (EA033) CPT_MW07_181218_1.0, CPT_MW23_181218_1.0,	CPT_MW07_181218_4.0, CPT_MW23_181218_3.0	18-Dec-2018	11-Jan-2019	18-Dec-2019	✔	11-Jan-2019	11-Apr-2019	✔
EA033-B: Potential Acidity								
Snap Lock Bag - frozen (EA033) CPT_MW02_051218_1.0, CPT_MW03_051218_1.0, CPT_MW04_051218_0.5,	CPT_MW02_051218_2.0, CPT_MW03_051218_3.0, CPT_MW04_051218_2.0	05-Dec-2018	11-Jan-2019	05-Dec-2019	✔	11-Jan-2019	11-Apr-2019	✔
Snap Lock Bag - frozen (EA033) CPT_MW01_061218_0.5,	CPT_MW01_061218_3.0	06-Dec-2018	11-Jan-2019	06-Dec-2019	✔	11-Jan-2019	11-Apr-2019	✔
Snap Lock Bag - frozen (EA033) CPT_MW21_171218_0.5, CPT_MW09_171218_0.5,	CPT_MW21_171218_3.0, CPT_MW09_171218_3.0	17-Dec-2018	11-Jan-2019	17-Dec-2019	✔	11-Jan-2019	11-Apr-2019	✔
Snap Lock Bag - frozen (EA033) CPT_MW07_181218_1.0, CPT_MW23_181218_1.0,	CPT_MW07_181218_4.0, CPT_MW23_181218_3.0	18-Dec-2018	11-Jan-2019	18-Dec-2019	✔	11-Jan-2019	11-Apr-2019	✔



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA033-C: Acid Neutralising Capacity								
Snap Lock Bag - frozen (EA033) CPT_MW02_051218_1.0, CPT_MW03_051218_1.0, CPT_MW04_051218_0.5,	CPT_MW02_051218_2.0, CPT_MW03_051218_3.0, CPT_MW04_051218_2.0	05-Dec-2018	11-Jan-2019	05-Dec-2019	✓	11-Jan-2019	11-Apr-2019	✓
Snap Lock Bag - frozen (EA033) CPT_MW01_061218_0.5,	CPT_MW01_061218_3.0	06-Dec-2018	11-Jan-2019	06-Dec-2019	✓	11-Jan-2019	11-Apr-2019	✓
Snap Lock Bag - frozen (EA033) CPT_MW21_171218_0.5, CPT_MW09_171218_0.5,	CPT_MW21_171218_3.0, CPT_MW09_171218_3.0	17-Dec-2018	11-Jan-2019	17-Dec-2019	✓	11-Jan-2019	11-Apr-2019	✓
Snap Lock Bag - frozen (EA033) CPT_MW07_181218_1.0, CPT_MW23_181218_1.0,	CPT_MW07_181218_4.0, CPT_MW23_181218_3.0	18-Dec-2018	11-Jan-2019	18-Dec-2019	✓	11-Jan-2019	11-Apr-2019	✓
EA033-D: Retained Acidity								
Snap Lock Bag - frozen (EA033) CPT_MW02_051218_1.0, CPT_MW03_051218_1.0, CPT_MW04_051218_0.5,	CPT_MW02_051218_2.0, CPT_MW03_051218_3.0, CPT_MW04_051218_2.0	05-Dec-2018	11-Jan-2019	05-Dec-2019	✓	11-Jan-2019	11-Apr-2019	✓
Snap Lock Bag - frozen (EA033) CPT_MW01_061218_0.5,	CPT_MW01_061218_3.0	06-Dec-2018	11-Jan-2019	06-Dec-2019	✓	11-Jan-2019	11-Apr-2019	✓
Snap Lock Bag - frozen (EA033) CPT_MW21_171218_0.5, CPT_MW09_171218_0.5,	CPT_MW21_171218_3.0, CPT_MW09_171218_3.0	17-Dec-2018	11-Jan-2019	17-Dec-2019	✓	11-Jan-2019	11-Apr-2019	✓
Snap Lock Bag - frozen (EA033) CPT_MW07_181218_1.0, CPT_MW23_181218_1.0,	CPT_MW07_181218_4.0, CPT_MW23_181218_3.0	18-Dec-2018	11-Jan-2019	18-Dec-2019	✓	11-Jan-2019	11-Apr-2019	✓
EA033-E: Acid Base Accounting								
Snap Lock Bag - frozen (EA033) CPT_MW02_051218_1.0, CPT_MW03_051218_1.0, CPT_MW04_051218_0.5,	CPT_MW02_051218_2.0, CPT_MW03_051218_3.0, CPT_MW04_051218_2.0	05-Dec-2018	11-Jan-2019	05-Dec-2019	✓	11-Jan-2019	11-Apr-2019	✓
Snap Lock Bag - frozen (EA033) CPT_MW01_061218_0.5,	CPT_MW01_061218_3.0	06-Dec-2018	11-Jan-2019	06-Dec-2019	✓	11-Jan-2019	11-Apr-2019	✓
Snap Lock Bag - frozen (EA033) CPT_MW21_171218_0.5, CPT_MW09_171218_0.5,	CPT_MW21_171218_3.0, CPT_MW09_171218_3.0	17-Dec-2018	11-Jan-2019	17-Dec-2019	✓	11-Jan-2019	11-Apr-2019	✓
Snap Lock Bag - frozen (EA033) CPT_MW07_181218_1.0, CPT_MW23_181218_1.0,	CPT_MW07_181218_4.0, CPT_MW23_181218_3.0	18-Dec-2018	11-Jan-2019	18-Dec-2019	✓	11-Jan-2019	11-Apr-2019	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Chromium Suite for Acid Sulphate Soils	EA033	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chromium Suite for Acid Sulphate Soils	EA033	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chromium Suite for Acid Sulphate Soils	EA033	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Chromium Suite for Acid Sulphate Soils	EA033	SOIL	In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
Preparation Methods	Method	Matrix	Method Descriptions
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house

ANZ
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: S. McColgan		Destination Laboratory	
PROJECT MANAGER (PM):		SITE: GUPP Groundwater Study		MOBILE:		ACLS	
PROJECT NUMBER & TASK CODE: 10592634		P.O. NO.: EN1096/18		EMAIL REPORT TO:			
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY				COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:			
COOLER SEAL (circle appropriate)							
Infect: Yes No							
SAMPLE TEMPERATURE							
CHILLED: Yes No							
SAMPLE INFORMATION (note: S = Soil, V = Water)		CONTAINER INFORMATION					
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
1	CPT-MW06-080119-0.2	S	08.01.19	0830		15 B	
2	CPT-MW06-080119-0.5	S		0835			
3	CPT-MW06-080119-1.0	S		0830			
4	CPT-MW06-080119-2.0	S		0835			
5	CPT-MW06-080119-3.0	S		0830			
6	CPT-MW06-080119-4.0	S		0835			
7	CPT-OC307-080119	W				6B	
8	CPT-OC407-080119	W				2V	
9	CPT-OC511	W				1V	
10	CPT-OC512	W				1V	
11	CPT045-MW05-080119-0.2	S	08.01.19	1100		15 B	
12	CPT045-MW05-080119-0.5	S		1105			
13	CPT045-MW05-080119-1.0	S		1110			
14	CPT045-MW05-080119-1.5	S		1115			
15	CPT045-MW05-080119-2.0	S		1120			
16	CPT045-MW05-080119-2.5	S		1125			
17	CPT045-MW05-080119-3.0	S		1130			
18	CPT045-MW05-080119-3.5	S		1135			
19	CPT045-MW05-080119-4.0	S		1140			

Notes: e.g. Highly contaminated sample
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc.

Environmental Division
Melbourne
Work Order Reference
EM1900131

Barcode: [Barcode]

Telephone: +61-3-8549 9800

RELINQUISHED BY: Name: Sebastian McColgan Date: 08.01.19 Time: 1630
Name: Tom Date: 08.01.19 Time: 1710
Name: Date: Time: 1710

RECEIVED BY: Name: Date: Time: 1710

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AS = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Soil Container Codes: Jar = Unpreserved glass jar

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Please freeze bags for spec analysis.

ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: S. McCallum		Destination Laboratory	
PROJECT MANAGER (PM): [REDACTED]		SITE: GIAPP Groundwater Study		MOBILE: [REDACTED]		PHONE: [REDACTED]	
PROJECT NUMBER & TASK CODE: 605 97634		P.O. NO.: EN/096/18		EMAIL REPORT TO: [REDACTED]		ALS:	
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)		Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
FOR LABORATORY USE ONLY		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		TWRG 621		HOLD	
COOLER SEAL (date appropriate)				TWRG 621			
Intact: Yes No N/A				TWRG 621			
SAMPLE TEMPERATURE				TWRG 621			
CHILLED: Yes No				TWRG 621			
SAMPLE INFORMATION (note: S = Soil, W = Water)		CONTAINER INFORMATION		TWRG 621			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
20	SP040-MW04-080119-02	S	08/01/19	1430		1615	
21	SP040-MW04-090119-05	S		1430			
22	SP040-MW04-090119-10	S		1435			
23	SP040-MW04-080119-15	S		1440			
24	SP040-MW04-080119-20	S		1445			
25	SP040-MW04-080119-25	S		1450			
26	SP040-MW04-080119-30	S		1455			
27	SP040-MW04-080119-35	S		1500			
28	SP040-MW04-080119-40	S		1505			
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT	
Name: Sebastian McCallum		Name: Tom		Name: Tom		Con' Note No:	
Date: 8-1-19		Date: 8-1-19		Date: 8-1-19		Transport Co:	
Time: 1630		Time: 1630		Time: 17:12			
Of: AECOM		Of: AECOM		Of: AECOM			

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag; Jar = Unpreserved glass jar

COC Page of

Please freeze bags for Spocas Analysis

From: [REDACTED]@aecom.com>
Sent: Wednesday, 9 January 2019 10:13 AM
To: [REDACTED]
Subject: RE: ON HOLD - AECOM 60592634 GIJPP - EM1900131

Hi [REDACTED]

Can you please change CPT040_MW04 to CPT040B_MW04?

Please analyse:

1. CPT_MW06_080119_0.2m = IWRG621
2. CPT_MW06_080119_2.0m = IWRG621
3. CPT040B_MW04_080119_0.2m = IWRG621
4. CPT040B_MW04_080119_0.5m = IWRG621
5. CPT045_MW05_080119_0.2m = IWRG621
6. CPT045_MW05_080119_1.0m = IWRG621
7. CPT_MW06_080119_1.0m = Chromium Reduced Sulfur (EA033)
8. CPT_MW06_080119_3.0m = Chromium Reduced Sulfur (EA033)
9. CPT040B_MW04_080119_1.0m = Chromium Reduced Sulfur (EA033)
10. CPT040B_MW04_080119_2.5m = Chromium Reduced Sulfur (EA033)
11. CPT045_MW05_080119_0.5m = Chromium Reduced Sulfur (EA033)
12. CPT045_MW05_080119_2.5m = Chromium Reduced Sulfur (EA033)
13. QC307_080119 = IWRG621 water equivalent
14. QC407_080119 = TPH(C6-C9)/BTEXN
15. QC511_080119 = TPH(C6-C9)/BTEXN
16. QC512_080119 = TPH(C6-C9)/BTEXN

At standard TAT. Thanks.

Senior Environmental Engineer

[REDACTED]
[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
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From: [REDACTED]@alsglobal.com]
Sent: Tuesday, 8 January 2019 5:51 PM
To: [REDACTED]
Subject: ON HOLD - AECOM 60592634 GIJPP - EM1900131

Hi [REDACTED]

Please find attached samples received on hold

Thanks

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add.
* PO Request

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900131

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]	Contact	: [REDACTED]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [REDACTED]	E-mail	: [REDACTED]@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60592634	Page	: 1 of 3
Order number	: ----	Quote number	: EP2016AECOMAU0014 (EN/096/18)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: GIJPP Groundwater Study		
Sampler	: SM		

Dates

Date Samples Received	: 08-Jan-2019 17:10	Issue Date	: 10-Jan-2019
Client Requested Due Date	: 16-Jan-2019	Scheduled Reporting Date	: 16-Jan-2019

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 2	Temperature	: 3.3°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 28 / 16

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM1900131-011 : 08-Jan-2019 11:00 : CPT045_MW05_080119_0.2
EM1900131-012 : 08-Jan-2019 11:05 : CPT045_MW05_080119_0.5
EM1900131-013 : 08-Jan-2019 11:10 : CPT045_MW05_080119_1.0
EM1900131-016 : 08-Jan-2019 11:25 : CPT045_MW05_080119_2.5
EM1900131-020 : 08-Jan-2019 14:30 : CPT040B_MW04_080119_0.2
EM1900131-021 : 08-Jan-2019 14:30 : CPT040B_MW04_080119_0.5
EM1900131-022 : 08-Jan-2019 14:35 : CPT040B_MW04_080119_1.0
EM1900131-025 : 08-Jan-2019 14:50 : CPT040B_MW04_080119_2.5

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA033 Chromium Suite for Acid Sulphate Soils	SOIL - EA055-103 Moisture Content	SOIL - P-16 IRG 621
EM1900131-001	08-Jan-2019 08:10	CPT_MW06_080119_0.2			✓	✓
EM1900131-002	08-Jan-2019 08:15	CPT_MW06_080119_0.5	✓			
EM1900131-003	08-Jan-2019 08:20	CPT_MW06_080119_1.0		✓		
EM1900131-004	08-Jan-2019 08:25	CPT_MW06_080119_2.0			✓	✓
EM1900131-005	08-Jan-2019 09:30	CPT_MW06_080119_3.0		✓		
EM1900131-006	08-Jan-2019 09:35	CPT_MW06_080119_4.0	✓			
EM1900131-011	08-Jan-2019 11:00	CPT045_MW05_080119_0.			✓	✓
EM1900131-012	08-Jan-2019 11:05	CPT045_MW05_080119_0.		✓		
EM1900131-013	08-Jan-2019 11:10	CPT045_MW05_080119_1.			✓	✓
EM1900131-014	08-Jan-2019 11:15	CPT045_MW05_080119_1.	✓			
EM1900131-015	08-Jan-2019 11:20	CPT045_MW05_080119_2.	✓			
EM1900131-016	08-Jan-2019 11:25	CPT045_MW05_080119_2.		✓		
EM1900131-017	08-Jan-2019 11:30	CPT045_MW05_080119_3.	✓			
EM1900131-018	08-Jan-2019 11:35	CPT045_MW05_080119_3.	✓			
EM1900131-019	08-Jan-2019 11:40	CPT045_MW05_080119_4.	✓			
EM1900131-020	08-Jan-2019 14:30	CPT040B_MW04_080119_.			✓	✓
EM1900131-021	08-Jan-2019 14:30	CPT040B_MW04_080119_.			✓	✓
EM1900131-022	08-Jan-2019 14:35	CPT040B_MW04_080119_.		✓		
EM1900131-023	08-Jan-2019 14:40	CPT040B_MW04_080119_.	✓			
EM1900131-024	08-Jan-2019 14:45	CPT040B_MW04_080119_.	✓			
EM1900131-025	08-Jan-2019 14:50	CPT040B_MW04_080119_.		✓		
EM1900131-026	08-Jan-2019 14:55	CPT040B_MW04_080119_.	✓			
EM1900131-027	08-Jan-2019 15:00	CPT040B_MW04_080119_.	✓			
EM1900131-028	08-Jan-2019 15:05	CPT040B_MW04_080119_.	✓			



Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - 448.3 Water VIC EPA IWRG621 - Water Equivalent Suite	WATER - W-18 TRH(C6 - C9)/BTEXN
EM1900131-007	08-Jan-2019 00:00	CPT_QC307_080119	✓	
EM1900131-008	08-Jan-2019 00:00	CPT_QC407_080119		✓
EM1900131-009	08-Jan-2019 00:00	CPT_QC511		✓
EM1900131-010	08-Jan-2019 00:00	CPT_QC512		✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EA005-P: pH by PC Titrator							
CPT_QC307_080119	Clear Plastic Bottle - Natural	----	08-Jan-2019	08-Jan-2019	✓	09-Jan-2019	✗

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

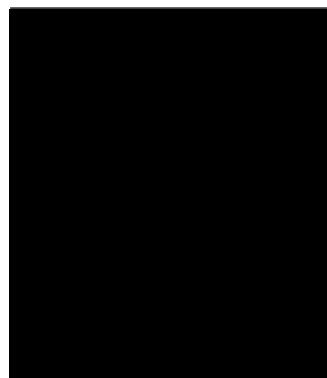
BRONWYN SHEEN

- PO Request Letter (PO_REQ)

Email bronwyn.sheen@alsglobal.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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CERTIFICATE OF ANALYSIS

Work Order : **EM1900131**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : SM
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 28
No. of samples analysed : 16

Page : 1 of 22
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 08-Jan-2019 17:10
Date Analysis Commenced : 10-Jan-2019
Issue Date : 17-Jan-2019 09:22



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
[REDACTED]	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
[REDACTED]	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
[REDACTED]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW06_080119_0.2	CPT_MW06_080119_1.0	CPT_MW06_080119_2.0	CPT_MW06_080119_3.0	CPT045_MW05_080119_0.2
Client sampling date / time					08-Jan-2019 08:10	08-Jan-2019 08:20	08-Jan-2019 08:25	08-Jan-2019 09:30	08-Jan-2019 11:00
Compound	CAS Number	LOR	Unit		EM1900131-001	EM1900131-003	EM1900131-004	EM1900131-005	EM1900131-011
				Result	Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit		4.4	----	7.1	----	5.7
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit		----	6.2	----	6.1	----
Titrateable Actual Acidity (23F)	----	2	mole H+ / t		----	2	----	3	----
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S		----	<0.02	----	<0.02	----
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S		----	<0.005	----	0.006	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t		----	<10	----	<10	----
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-		----	1.5	----	1.5	----
Net Acidity (sulfur units)	----	0.02	% S		----	<0.02	----	<0.02	----
Net Acidity (acidity units)	----	10	mole H+ / t		----	<10	----	<10	----
Liming Rate	----	1	kg CaCO3/t		----	<1	----	<1	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	<0.02	----	<0.02	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	<10	----	<10	----
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	<1	----	<1	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		4.7	----	19.4	----	8.6
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	----	7	----	<5
Cadmium	7440-43-9	1	mg/kg		<1	----	<1	----	<1
Copper	7440-50-8	5	mg/kg		9	----	<5	----	<5
Lead	7439-92-1	5	mg/kg		24	----	11	----	<5
Molybdenum	7439-98-7	2	mg/kg		2	----	<2	----	<2
Nickel	7440-02-0	2	mg/kg		2	----	10	----	<2
Selenium	7782-49-2	5	mg/kg		<5	----	<5	----	<5
Silver	7440-22-4	2	mg/kg		<2	----	<2	----	<2
Tin	7440-31-5	5	mg/kg		<5	----	<5	----	<5
Zinc	7440-66-6	5	mg/kg		13	----	<5	----	<5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	<0.1	----	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW06_080119_0.2	CPT_MW06_080119_1.0	CPT_MW06_080119_2.0	CPT_MW06_080119_3.0	CPT045_MW05_080119_0.2
Client sampling date / time					08-Jan-2019 08:10	08-Jan-2019 08:20	08-Jan-2019 08:25	08-Jan-2019 09:30	08-Jan-2019 11:00
Compound	CAS Number	LOR	Unit		EM1900131-001	EM1900131-003	EM1900131-004	EM1900131-005	EM1900131-011
				Result	Result	Result	Result	Result	Result
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg	<1	----	<1	----	<1	
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg	240	----	120	----	<40	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	<0.1	----	<0.1	
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg	<0.2	----	<0.2	----	<0.2	
Toluene	108-88-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5	
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5	
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5	
Styrene	100-42-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5	
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5	
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	----	<0.2	----	<0.2	
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	<0.5	----	<0.5	
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	----	<1	
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	----	<0.02	----	<0.02	
1,1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	----	<0.01	----	<0.01	
Methylene chloride	75-09-2	0.4	mg/kg	<0.4	----	<0.4	----	<0.4	
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	----	<0.02	----	<0.02	
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	----	<0.01	----	<0.01	
Chloroform	67-66-3	0.02	mg/kg	<0.02	----	<0.02	----	<0.02	
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	----	<0.01	----	<0.01	
Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	----	<0.01	----	<0.01	
1,2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	----	<0.02	----	<0.02	
Trichloroethene	79-01-6	0.02	mg/kg	<0.02	----	<0.02	----	<0.02	
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	----	<0.04	----	<0.04	
Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	----	<0.02	----	<0.02	
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	----	<0.01	----	<0.01	
1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	----	<0.02	----	<0.02	
Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	----	<0.02	----	<0.02	
Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	----	<0.02	----	<0.02	



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT_MW06_080119_0.2	CPT_MW06_080119_1.0	CPT_MW06_080119_2.0	CPT_MW06_080119_3.0	CPT045_MW05_080119_0.2
Client sampling date / time				08-Jan-2019 08:10	08-Jan-2019 08:20	08-Jan-2019 08:25	08-Jan-2019 09:30	08-Jan-2019 11:00
Compound	CAS Number	LOR	Unit	EM1900131-001	EM1900131-003	EM1900131-004	EM1900131-005	EM1900131-011
				Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued								
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	----	<0.02	----	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	----	<0.02	----	<0.02
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	----	<0.01	----	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	----	<0.01	----	<0.01
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	----	<0.01	----	<0.01
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	<1	----	<1	----	<1
2-Methylphenol	95-48-7	1	mg/kg	<1	----	<1	----	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	<1	----	<1
2-Nitrophenol	88-75-5	1	mg/kg	<1	----	<1	----	<1
2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	----	<1	----	<1
2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	----	<5	----	<5
4-Nitrophenol	100-02-7	5	mg/kg	<5	----	<5	----	<5
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	----	<5	----	<5
Dinoseb	88-85-7	5	mg/kg	<5	----	<5	----	<5
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	----	<5	----	<5
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	<1	----	<1	----	<1
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT_MW06_080119_0.2	CPT_MW06_080119_1.0	CPT_MW06_080119_2.0	CPT_MW06_080119_3.0	CPT045_MW05_080119_0.2
Client sampling date / time				08-Jan-2019 08:10	08-Jan-2019 08:20	08-Jan-2019 08:25	08-Jan-2019 09:30	08-Jan-2019 11:00
Compound	CAS Number	LOR	Unit	EM1900131-001	EM1900131-003	EM1900131-004	EM1900131-005	EM1900131-011
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	0.6	----	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	1.2	----	1.2
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
beta-BHC	319-85-7	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
gamma-BHC	58-89-9	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
delta-BHC	319-86-8	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Heptachlor	76-44-8	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Aldrin	309-00-2	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
4.4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Dieldrin	60-57-1	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Endrin	72-20-8	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	----	<0.03	----	<0.03
4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT_MW06_080119_0.2	CPT_MW06_080119_1.0	CPT_MW06_080119_2.0	CPT_MW06_080119_3.0	CPT045_MW05_080119_0.2
Client sampling date / time					08-Jan-2019 08:10	08-Jan-2019 08:20	08-Jan-2019 08:25	08-Jan-2019 09:30	08-Jan-2019 11:00
Compound	CAS Number	LOR	Unit		EM1900131-001	EM1900131-003	EM1900131-004	EM1900131-005	EM1900131-011
				Result	Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued									
Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	----	<0.03	----	<0.03	<0.03
4.4'-DDT	50-29-3	0.05	mg/kg	<0.05	----	<0.05	----	<0.05	<0.05
Methoxychlor	72-43-5	0.03	mg/kg	<0.03	----	<0.03	----	<0.03	<0.03
^ Sum of organochlorine pesticides	----	0.03	mg/kg	<0.03	----	<0.03	----	<0.03	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	<0.03	----	<0.03	----	<0.03	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05	<0.05
^ Chlordane	57-74-9	0.03	mg/kg	<0.03	----	<0.03	----	<0.03	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	<0.03	----	<0.03	----	<0.03	<0.03
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	----	<50	<50
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	<10	----	<10	<10
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	----	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	<50	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	50	mg/kg	<50	----	<50	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	----	<100	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	----	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	<50	----	<50	<50
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	<50	----	<50	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	<10	----	<10	<10
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	109	----	119	----	114	
EP074S: VOC Surrogates (Ultra-Trace)									
1,2-Dichloroethane-D4	17060-07-0	0.1	%	86.2	----	78.9	----	82.2	
Toluene-D8	2037-26-5	0.1	%	85.1	----	75.4	----	80.8	
4-Bromofluorobenzene	460-00-4	0.1	%	98.2	----	90.8	----	96.9	
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.025	%	117	----	103	----	109	
2-Chlorophenol-D4	93951-73-6	0.025	%	93.5	----	81.9	----	87.0	



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT_MW06_080119_0.2	CPT_MW06_080119_1.0	CPT_MW06_080119_2.0	CPT_MW06_080119_3.0	CPT045_MW05_080119_0.2
Client sampling date / time				08-Jan-2019 08:10	08-Jan-2019 08:20	08-Jan-2019 08:25	08-Jan-2019 09:30	08-Jan-2019 11:00
Compound	CAS Number	LOR	Unit	EM1900131-001	EM1900131-003	EM1900131-004	EM1900131-005	EM1900131-011
				Result	Result	Result	Result	Result
EP075S: Acid Extractable Surrogates (Waste Classification) - Continued								
2,4,6-Tribromophenol	118-79-6	0.025	%	103	----	90.3	----	97.9
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)								
Nitrobenzene-D5	4165-60-0	0.025	%	118	----	105	----	110
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%	111	----	94.5	----	99.0
2-Fluorobiphenyl	321-60-8	0.025	%	122	----	108	----	111
Anthracene-d10	1719-06-8	0.025	%	117	----	103	----	107
4-Terphenyl-d14	1718-51-0	0.025	%	112	----	99.6	----	104



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT045_MW05_0801 19_0.5	CPT045_MW05_0801 19_1.0	CPT045_MW05_0801 19_2.5	CPT040B_MW04_080 119_0.2	CPT040B_MW04_080 119_0.5
Client sampling date / time					08-Jan-2019 11:05	08-Jan-2019 11:10	08-Jan-2019 11:25	08-Jan-2019 14:30	08-Jan-2019 14:30
Compound	CAS Number	LOR	Unit		EM1900131-012	EM1900131-013	EM1900131-016	EM1900131-020	EM1900131-021
				Result	Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit	----	6.1	----	----	4.3	5.1
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit	5.8	----	5.6	----	----	----
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	<2	----	5	----	----	----
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	----	<0.02	----	----	----
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S	0.008	----	<0.005	----	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	----	<10	----	----	----
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	1.5	----	1.5	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	<0.02	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	<10	----	----	----
Liming Rate	----	1	kg CaCO3/t	<1	----	<1	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	<0.02	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	<10	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	<1	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	----	13.1	----	----	7.1	18.4
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	----	60	----	----	6	89
Cadmium	7440-43-9	1	mg/kg	----	<1	----	----	<1	<1
Copper	7440-50-8	5	mg/kg	----	<5	----	----	<5	<5
Lead	7439-92-1	5	mg/kg	----	9	----	----	20	11
Molybdenum	7439-98-7	2	mg/kg	----	<2	----	----	<2	<2
Nickel	7440-02-0	2	mg/kg	----	4	----	----	<2	18
Selenium	7782-49-2	5	mg/kg	----	<5	----	----	<5	<5
Silver	7440-22-4	2	mg/kg	----	<2	----	----	<2	<2
Tin	7440-31-5	5	mg/kg	----	<5	----	----	<5	<5
Zinc	7440-66-6	5	mg/kg	----	<5	----	----	<5	5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	----	----	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	<0.5	----	----	<0.5	<0.5



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT045_MW05_0801 19_0.5	CPT045_MW05_0801 19_1.0	CPT045_MW05_0801 19_2.5	CPT040B_MW04_080 119_0.2	CPT040B_MW04_080 119_0.5
Client sampling date / time					08-Jan-2019 11:05	08-Jan-2019 11:10	08-Jan-2019 11:25	08-Jan-2019 14:30	08-Jan-2019 14:30
Compound	CAS Number	LOR	Unit		EM1900131-012	EM1900131-013	EM1900131-016	EM1900131-020	EM1900131-021
				Result	Result	Result	Result	Result	Result
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg	----	<1	----	<1	<1	<1
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg	----	80	----	<40	240	240
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg	----	<0.2	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Styrene	100-42-5	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	<0.2	----	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg	----	<1	----	<1	<1	<1
EP074I: Volatile Halogenated Compounds									
Vinyl chloride	75-01-4	0.02	mg/kg	----	<0.02	----	<0.02	<0.02	<0.02
1,1-Dichloroethene	75-35-4	0.01	mg/kg	----	<0.01	----	<0.01	<0.01	<0.01
Methylene chloride	75-09-2	0.4	mg/kg	----	<0.4	----	<0.4	<0.4	<0.4
trans-1,2-Dichloroethene	156-60-5	0.02	mg/kg	----	<0.02	----	<0.02	<0.02	<0.02
cis-1,2-Dichloroethene	156-59-2	0.01	mg/kg	----	<0.01	----	<0.01	<0.01	<0.01
Chloroform	67-66-3	0.02	mg/kg	----	<0.02	----	<0.02	<0.02	<0.02
1,1,1-Trichloroethane	71-55-6	0.01	mg/kg	----	<0.01	----	<0.01	<0.01	<0.01
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	<0.01	----	<0.01	<0.01	<0.01
1,2-Dichloroethane	107-06-2	0.02	mg/kg	----	<0.02	----	<0.02	<0.02	<0.02
Trichloroethene	79-01-6	0.02	mg/kg	----	<0.02	----	<0.02	<0.02	<0.02
1,1,2-Trichloroethane	79-00-5	0.04	mg/kg	----	<0.04	----	<0.04	<0.04	<0.04
Tetrachloroethene	127-18-4	0.02	mg/kg	----	<0.02	----	<0.02	<0.02	<0.02
1,1,1,2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	<0.01	----	<0.01	<0.01	<0.01
1,1,2,2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	<0.02	----	<0.02	<0.02	<0.02
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	<0.02	----	<0.02	<0.02	<0.02
Chlorobenzene	108-90-7	0.02	mg/kg	----	<0.02	----	<0.02	<0.02	<0.02



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT045_MW05_0801 19_0.5	CPT045_MW05_0801 19_1.0	CPT045_MW05_0801 19_2.5	CPT040B_MW04_080 119_0.2	CPT040B_MW04_080 119_0.5
Client sampling date / time					08-Jan-2019 11:05	08-Jan-2019 11:10	08-Jan-2019 11:25	08-Jan-2019 14:30	08-Jan-2019 14:30
Compound	CAS Number	LOR	Unit		EM1900131-012	EM1900131-013	EM1900131-016	EM1900131-020	EM1900131-021
				Result	Result	Result	Result	Result	Result
EP074I: Volatile Halogenated Compounds - Continued									
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	<0.02	----	<0.02	<0.02	<0.02
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	<0.02	----	<0.02	<0.02	<0.02
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	<0.01	----	<0.01	<0.01	<0.01
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	----	<0.01	----	<0.01	<0.01	<0.01
^ Sum of other chlorinated hydrocarbons	----	0.01	mg/kg	----	<0.01	----	<0.01	<0.01	<0.01
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
2.6-Dichlorophenol	87-65-0	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
4-Chloro-3-methylphenol	59-50-7	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	----	<0.05	----	<0.05	<0.05	<0.05
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	----	<0.05	----	<0.05	<0.05	<0.05
2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	----	<0.05	----	<0.05	<0.05	<0.05
Pentachlorophenol	87-86-5	0.2	mg/kg	----	<0.2	----	<0.2	<0.2	<0.2
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	1	mg/kg	----	<1	----	<1	<1	<1
2-Methylphenol	95-48-7	1	mg/kg	----	<1	----	<1	<1	<1
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	<1	----	<1	<1	<1
2-Nitrophenol	88-75-5	1	mg/kg	----	<1	----	<1	<1	<1
2.4-Dimethylphenol	105-67-9	1	mg/kg	----	<1	----	<1	<1	<1
2.4-Dinitrophenol	51-28-5	5	mg/kg	----	<5	----	<5	<5	<5
4-Nitrophenol	100-02-7	5	mg/kg	----	<5	----	<5	<5	<5
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	----	<5	----	<5	<5	<5
Dinoseb	88-85-7	5	mg/kg	----	<5	----	<5	<5	<5
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	----	<5	----	<5	<5	<5
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	----	<1	----	<1	<1	<1
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	CPT045_MW05_0801 19_0.5	CPT045_MW05_0801 19_1.0	CPT045_MW05_0801 19_2.5	CPT040B_MW04_080 119_0.2	CPT040B_MW04_080 119_0.5
Client sampling date / time					08-Jan-2019 11:05	08-Jan-2019 11:10	08-Jan-2019 11:25	08-Jan-2019 14:30	08-Jan-2019 14:30
Compound	CAS Number	LOR	Unit		EM1900131-012	EM1900131-013	EM1900131-016	EM1900131-020	EM1900131-021
				Result	Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	0.6	----	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	1.2	----	1.2	1.2	1.2
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
beta-BHC	319-85-7	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
gamma-BHC	58-89-9	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
delta-BHC	319-86-8	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
Heptachlor	76-44-8	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
Aldrin	309-00-2	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
cis-Chlordane	5103-71-9	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
trans-Chlordane	5103-74-2	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
Endosulfan 1	959-98-8	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
4.4'-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	0.14	<0.05	<0.05
Dieldrin	60-57-1	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
Endrin	72-20-8	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
Endosulfan 2	33213-65-9	0.03	mg/kg	----	<0.03	----	<0.03	<0.03	<0.03
4.4'-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	<0.05	<0.05	<0.05



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Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID				
Client sampling date / time				CPT045_MW05_0801 19_0.5	CPT045_MW05_0801 19_1.0	CPT045_MW05_0801 19_2.5	CPT040B_MW04_080 119_0.2	CPT040B_MW04_080 119_0.5
Compound				EM1900131-012	EM1900131-013	EM1900131-016	EM1900131-020	EM1900131-021
CAS Number				Result	Result	Result	Result	Result
LOR								
Unit								
EP075I: Organochlorine Pesticides - Continued								
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	<0.03	----	<0.03	<0.03
4.4`-DDT	50-29-3	0.05	mg/kg	----	<0.05	----	<0.05	<0.05
Methoxychlor	72-43-5	0.03	mg/kg	----	<0.03	----	<0.03	<0.03
^ Sum of organochlorine pesticides	----	0.03	mg/kg	----	<0.03	----	0.14	<0.03
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	<0.03	----	<0.03	<0.03
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	<0.05	----	0.14	<0.05
^ Chlordane	57-74-9	0.03	mg/kg	----	<0.03	----	<0.03	<0.03
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	<0.03	----	<0.03	<0.03
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg	----	<50	----	<50	<50
C6 - C10 Fraction	C6_C10	10	mg/kg	----	<10	----	<10	<10
C15 - C28 Fraction	----	100	mg/kg	----	<100	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg	----	<100	----	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	<50	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
>C10 - C16 Fraction	----	50	mg/kg	----	<50	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	----	<100	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	----	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	<50	----	<50	<50
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	<50	----	<50	<50
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	<10	----	<10	<10
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	117	----	117	112
EP074S: VOC Surrogates (Ultra-Trace)								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	86.4	----	84.5	81.5
Toluene-D8	2037-26-5	0.1	%	----	84.3	----	83.1	81.5
4-Bromofluorobenzene	460-00-4	0.1	%	----	96.5	----	95.5	94.8
EP075S: Acid Extractable Surrogates (Waste Classification)								
Phenol-d6	13127-88-3	0.025	%	----	107	----	124	109
2-Chlorophenol-D4	93951-73-6	0.025	%	----	84.4	----	96.7	87.8



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT045_MW05_0801 19_0.5	CPT045_MW05_0801 19_1.0	CPT045_MW05_0801 19_2.5	CPT040B_MW04_080 119_0.2	CPT040B_MW04_080 119_0.5
Client sampling date / time				08-Jan-2019 11:05	08-Jan-2019 11:10	08-Jan-2019 11:25	08-Jan-2019 14:30	08-Jan-2019 14:30
Compound	CAS Number	LOR	Unit	EM1900131-012	EM1900131-013	EM1900131-016	EM1900131-020	EM1900131-021
				Result	Result	Result	Result	Result
EP075S: Acid Extractable Surrogates (Waste Classification) - Continued								
2,4,6-Tribromophenol	118-79-6	0.025	%	----	93.9	----	108	98.6
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)								
Nitrobenzene-D5	4165-60-0	0.025	%	----	107	----	118	111
1,2-Dichlorobenzene-D4	2199-69-1	0.025	%	----	94.7	----	109	101
2-Fluorobiphenyl	321-60-8	0.025	%	----	110	----	124	113
Anthracene-d10	1719-06-8	0.025	%	----	106	----	120	107
4-Terphenyl-d14	1718-51-0	0.025	%	----	103	----	116	105



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				CPT040B_MW04_080 119_1.0	CPT040B_MW04_080 119_2.5	----	----	----
Client sampling date / time				08-Jan-2019 14:35	08-Jan-2019 14:50	----	----	----
Compound	CAS Number	LOR	Unit	EM1900131-022	EM1900131-025	-----	-----	-----
				Result	Result	----	----	----
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	5.2	5.2	----	----	----
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	15	11	----	----	----
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.02	<0.02	----	----	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	<0.005	<0.005	----	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	<10	<10	----	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	0.02	<0.02	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	15	11	----	----	----
Liming Rate	----	1	kg CaCO3/t	1	<1	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.02	<0.02	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	15	11	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	1	<1	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC307_080119	CPT_QC407_080119	CPT_QC511	CPT_QC512	----
Client sampling date / time					08-Jan-2019 00:00	08-Jan-2019 00:00	08-Jan-2019 00:00	08-Jan-2019 00:00	----
Compound	CAS Number	LOR	Unit		EM1900131-007	EM1900131-008	EM1900131-009	EM1900131-010	-----
					Result	Result	Result	Result	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		6.28	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Silver	7440-22-4	0.001	mg/L		<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG050F: Dissolved Hexavalent Chromium									
Hexavalent Chromium	18540-29-9	0.01	mg/L		<0.01	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	0.004	mg/L		<0.004	----	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
^ Total Polychlorinated biphenyls	----	1	µg/L		<1	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	5	µg/L		<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Vinyl chloride	75-01-4	50	µg/L		<50	----	----	----	----
1,1-Dichloroethene	75-35-4	5	µg/L		<5	----	----	----	----
Methylene chloride	75-09-2	5	µg/L		<5	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	5	µg/L		<5	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	5	µg/L		<5	----	----	----	----
1,1,1-Trichloroethane	71-55-6	5	µg/L		<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	----	----	----	----
1,2-Dichloroethane	107-06-2	5	µg/L		<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC307_080119	CPT_QC407_080119	CPT_QC511	CPT_QC512	----
Client sampling date / time					08-Jan-2019 00:00	08-Jan-2019 00:00	08-Jan-2019 00:00	08-Jan-2019 00:00	----
Compound	CAS Number	LOR	Unit		EM1900131-007	EM1900131-008	EM1900131-009	EM1900131-010	-----
					Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1,1,2-Trichloroethane	79-00-5	5	µg/L		<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	----	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L		<5	----	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L		<5	----	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	----	----	----	----
1,4-Dichlorobenzene	106-46-7	5	µg/L		<5	----	----	----	----
1,2-Dichlorobenzene	95-50-1	5	µg/L		<5	----	----	----	----
1,2,4-Trichlorobenzene	120-82-1	5	µg/L		<5	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1,2,3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)									
2-Chlorophenol	95-57-8	2	µg/L		<2	----	----	----	----
2,4-Dichlorophenol	120-83-2	2	µg/L		<2	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC307_080119	CPT_QC407_080119	CPT_QC511	CPT_QC512	----
Client sampling date / time					08-Jan-2019 00:00	08-Jan-2019 00:00	08-Jan-2019 00:00	08-Jan-2019 00:00	----
Compound	CAS Number	LOR	Unit		EM1900131-007	EM1900131-008	EM1900131-009	EM1900131-010	-----
					Result	Result	Result	Result	----
EP075A: Phenolic Compounds (Halogenated) - Continued									
2,6-Dichlorophenol	87-65-0	2	µg/L		<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	4	µg/L		<4	----	----	----	----
2,4,5-Trichlorophenol	95-95-4	2	µg/L		<2	----	----	----	----
2,4,6-Trichlorophenol	88-06-2	2	µg/L		<2	----	----	----	----
2,3,5,6-Tetrachlorophenol	935-95-5	2	µg/L		<2	----	----	----	----
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	4901-51-3/58-90-2	2	µg/L		<2	----	----	----	----
Pentachlorophenol	87-86-5	2	µg/L		<2	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)									
Phenol	108-95-2	4	µg/L		<4	----	----	----	----
2-Methylphenol	95-48-7	4	µg/L		<4	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L		<4	----	----	----	----
2-Nitrophenol	88-75-5	4	µg/L		<4	----	----	----	----
2,4-Dimethylphenol	105-67-9	4	µg/L		<4	----	----	----	----
2,4-Dinitrophenol	51-28-5	100	µg/L		<100	----	----	----	----
4-Nitrophenol	100-02-7	50	µg/L		<50	----	----	----	----
2-Methyl-4,6-dinitrophenol	8071-51-0	50	µg/L		<50	----	----	----	----
Dinoseb	88-85-7	50	µg/L		<50	----	----	----	----
2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	50	µg/L		<50	----	----	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
4,4`-DDT	50-29-3	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC307_080119	CPT_QC407_080119	CPT_QC511	CPT_QC512	----
Client sampling date / time					08-Jan-2019 00:00	08-Jan-2019 00:00	08-Jan-2019 00:00	08-Jan-2019 00:00	----
Compound	CAS Number	LOR	Unit		EM1900131-007	EM1900131-008	EM1900131-009	EM1900131-010	-----
				Result	Result	Result	Result	Result	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		82.8	----	----	----	----
EP074S: VOC Surrogates									
1,2-Dichloroethane-D4	17060-07-0	5	%		89.1	----	----	----	----
Toluene-D8	2037-26-5	5	%		89.2	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		100	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		37.0	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		89.7	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%		89.6	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		91.1	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		97.8	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		99.3	----	----	----	----



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Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CPT_QC307_080119	CPT_QC407_080119	CPT_QC511	CPT_QC512	----
Client sampling date / time					08-Jan-2019 00:00	08-Jan-2019 00:00	08-Jan-2019 00:00	08-Jan-2019 00:00	----
Compound	CAS Number	LOR	Unit		EM1900131-007	EM1900131-008	EM1900131-009	EM1900131-010	-----
					Result	Result	Result	Result	----
EP075S: Acid Extractable Surrogates (Waste Classification)									
Phenol-d6	13127-88-3	0.25	%		37.5	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.25	%		87.3	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.25	%		79.6	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)									
Nitrobenzene-D5	4165-60-0	0.25	%		95.0	----	----	----	----
1,2-Dichlorobenzene-D4	2199-69-1	0.25	%		92.8	----	----	----	----
2-Fluorobiphenyl	321-60-8	0.25	%		100	----	----	----	----
Anthracene-d10	1719-06-8	0.25	%		97.5	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.25	%		92.0	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		92.3	92.4	99.7	90.1	----
Toluene-D8	2037-26-5	2	%		88.2	89.8	97.2	82.8	----
4-Bromofluorobenzene	460-00-4	2	%		110	94.0	112	101	----



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Sub-Matrix: SOIL		□□□□ □ □□□ □ s □	
<i>Compound</i>	<i>CAS Number</i>	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates (Ultra-Trace)			
1,2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	28	134
2-Chlorophenol-D4	93951-73-6	27	123
2,4,6-Tribromophenol	118-79-6	25	149
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	29	125
1,2-Dichlorobenzene-D4	2199-69-1	31	117
2-Fluorobiphenyl	321-60-8	44	136
Anthracene-d10	1719-06-8	53	133
4-Terphenyl-d14	1718-51-0	59	141

Sub-Matrix: WATER		□□□□ □ □□□ □ s □	
<i>Compound</i>	<i>CAS Number</i>	□□%	□□ □
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	125
EP074S: VOC Surrogates			
1,2-Dichloroethane-D4	17060-07-0	72	132
Toluene-D8	2037-26-5	77	132
4-Bromofluorobenzene	460-00-4	67	131
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	13	90
2-Chlorophenol-D4	93951-73-6	42	117
2,4,6-Tribromophenol	118-79-6	52	140
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	49	136

Sub-Matrix: WATER		☐☐☐☐ ☐ ☐☐☐ ☐ s ☐	
Compound	CAS Number	☐☐%	☐☐☐
EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued			
1,2-Dichlorobenzene-D4	2199-69-1	49	128
2-Fluorobiphenyl	321-60-8	57	137
Anthracene-d10	1719-06-8	67	137
4-Terphenyl-d14	1718-51-0	66	136
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

Work Order	: EM1900131	Page	: 1 of 14
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: [REDACTED]		
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [REDACTED]	E-mail	: [REDACTED]@alsglobal.com
Telephone	: ----	Telephone	: +6138549 9645
Facsimile	: ----	Facsimile	: +61-3-8549 9626
Project	: 60592634	Date Received	: 08-Jan-2019 17:10
Order number	: ----	Date Analysed	: 10-Jan-2019
C-O-C number	: ----	Date Issued	: 17-Jan-2019 09:22
No. of samples received	: 28		
No. of samples analysed	: 16	Quote number	: EN/096/18

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client Sample ID	ALS Sample ID	Compound	Method	LOR	Limits	Result
CPT045_MW05_080 119_1.0	EM1900131-013	Arsenic	EG005T	5	< 20 mg/kg	60 mg/kg
CPT040B_MW04_08 0119_0.5	EM1900131-021	Arsenic	EG005T	5	< 20 mg/kg	89 mg/kg



Analytical Results

Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Client sample ID		CPT_MW06_0 80119_0.2	CPT_MW06_0 80119_2.0	CPT045_MW0 5_080119_0.2	CPT045_MW0 5_080119_1.0	CPT040B_MW 04_080119_0. 2
				Sampling date/time						
				□□□□ □□	□□□□ □□	08-Jan-2019 08:10	08-Jan-2019 08:25	08-Jan-2019 11:00	08-Jan-2019 11:10	08-Jan-2019 14:30
				□□□□	□□□□	EM1900131-001	EM1900131-004	EM1900131-011	EM1900131-013	EM1900131-020
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	2	12.5	4.4	7.1	5.7	6.1	4.3
EG005T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	2000	<5	7	<5	60	6
Cadmium	EG005T	1	mg/kg	----	400	<1	<1	<1	<1	<1
Copper	EG005T	5	mg/kg	----	20000	9	<5	<5	<5	<5
Lead	EG005T	5	mg/kg	----	6000	24	11	<5	9	20
Molybdenum	EG005T	2	mg/kg	----	4000	2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	12000	2	10	<2	4	<2
Selenium	EG005T	5	mg/kg	----	200	<5	<5	<5	<5	<5
Silver	EG005T	2	mg/kg	----	720	<2	<2	<2	<2	<2
Zinc	EG005T	5	mg/kg	----	140000	13	<5	<5	<5	<5
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	300	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	10000	<1	<1	<1	<1	<1
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	40000	240	120	<40	80	<40
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	16	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	240	<0.2	<0.2	<0.2	<0.2	<0.2
EP074I: Volatile Halogenated Compounds										
Vinyl chloride	EP074-UT	0.02	mg/kg	----	4.8	<0.02	<0.02	<0.02	<0.02	<0.02
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	11	<0.02	<0.02	<0.02	<0.02	<0.02
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	50	<0.01	<0.01	<0.01	<0.01	<0.01
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	320	<0.03	<0.03	<0.03	<0.03	<0.03
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	2200	<1	<1	<1	<1	<1



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

				Client sample ID		CPT_MW06_0 80119_0.2	CPT_MW06_0 80119_2.0	CPT045_MW0 5_080119_0.2	CPT045_MW0 5_080119_1.0	CPT040B_MW 04_080119_0. 2
Sampling date/time				□ □ □ □ □ □	□ □ □ □ □ □	08-Jan-2019 08:10	08-Jan-2019 08:25	08-Jan-2019 11:00	08-Jan-2019 11:10	08-Jan-2019 14:30
Compound	Method	LOR	Unit	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □ □ □ □ □	EM1900131-001	EM1900131-004	EM1900131-011	EM1900131-013	EM1900131-020
EP075B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	20	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	400	<0.5	<0.5	<0.5	<0.5	<0.5
EP075I: Organochlorine Pesticides										
Heptachlor	EP075-EM	0.03	mg/kg	----	4.8	<0.03	<0.03	<0.03	<0.03	<0.03
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	4.8	<0.03	<0.03	<0.03	<0.03	<0.03
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	<0.05	<0.05	<0.05	<0.05	0.14
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	16	<0.03	<0.03	<0.03	<0.03	<0.03
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	50	<0.03	<0.03	<0.03	<0.03	<0.03
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	2600	<10	<10	<10	<10	<10
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	40000	<50	<50	<50	<50	<50



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL				Client sample ID		CPT_MW06_0 80119_0.2	CPT_MW06_0 80119_2.0	CPT045_MW0 5_080119_0.2	CPT045_MW0 5_080119_1.0	CPT040B_MW 04_080119_0.2
Sampling date/time				□ □ □ □ □ □	□ □ □ □ □ □	08-Jan-2019 08:10	08-Jan-2019 08:25	08-Jan-2019 11:00	08-Jan-2019 11:10	08-Jan-2019 14:30
Compound	Method	LOR	Unit	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □ □ □ □ □	EM1900131-001	EM1900131-004	EM1900131-011	EM1900131-013	EM1900131-020
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	4	9	4.4	7.1	5.7	6.1	4.3
EG005T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	500	<5	7	<5	60	6
Cadmium	EG005T	1	mg/kg	----	100	<1	<1	<1	<1	<1
Copper	EG005T	5	mg/kg	----	5000	9	<5	<5	<5	<5
Lead	EG005T	5	mg/kg	----	1500	24	11	<5	9	20
Molybdenum	EG005T	2	mg/kg	----	1000	2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	3000	2	10	<2	4	<2
Selenium	EG005T	5	mg/kg	----	50	<5	<5	<5	<5	<5
Silver	EG005T	2	mg/kg	----	180	<2	<2	<2	<2	<2
Tin	EG005T	5	mg/kg	----	500	<5	<5	<5	<5	<5
Zinc	EG005T	5	mg/kg	----	35000	13	<5	<5	<5	<5
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	75	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	<1	<1	<1	<1
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	10000	240	120	<40	80	<40
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	4	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	70	<0.2	<0.2	<0.2	<0.2	<0.2
EP074I: Volatile Halogenated Compounds										
Vinyl chloride	EP074-UT	0.02	mg/kg	----	1.2	<0.02	<0.02	<0.02	<0.02	<0.02
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	2.8	<0.02	<0.02	<0.02	<0.02	<0.02
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	10	<0.01	<0.01	<0.01	<0.01	<0.01
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	<0.03	<0.03	<0.03	<0.03
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	560	<1	<1	<1	<1	<1



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

				Client sample ID		CPT_MW06_0 80119_0.2	CPT_MW06_0 80119_2.0	CPT045_MW0 5_080119_0.2	CPT045_MW0 5_080119_1.0	CPT040B_MW 04_080119_0. 2
Sampling date/time				□ □ □ □ □ □	□ □ □ □ □ □	08-Jan-2019 08:10	08-Jan-2019 08:25	08-Jan-2019 11:00	08-Jan-2019 11:10	08-Jan-2019 14:30
Compound	Method	LOR	Unit	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □ □ □ □ □	EM1900131-001	EM1900131-004	EM1900131-011	EM1900131-013	EM1900131-020
EP075B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	<0.5	<0.5
EP075I: Organochlorine Pesticides										
Heptachlor	EP075-EM	0.03	mg/kg	----	1.2	<0.03	<0.03	<0.03	<0.03	<0.03
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	1.2	<0.03	<0.03	<0.03	<0.03	<0.03
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	<0.05	<0.05	<0.05	<0.05	0.14
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	4	<0.03	<0.03	<0.03	<0.03	<0.03
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	<0.03	<0.03	<0.03	<0.03
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	650	<10	<10	<10	<10	<10
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	10000	<50	<50	<50	<50	<50



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

				Client sample ID		CPT_MW06_0 80119_0.2	CPT_MW06_0 80119_2.0	CPT045_MW0 5_080119_0.2	CPT045_MW0 5_080119_1.0	CPT040B_MW 04_080119_0.2
Sampling date/time				□ □ □ □ □ □	□ □ □ □ □ □	08-Jan-2019 08:10	08-Jan-2019 08:25	08-Jan-2019 11:00	08-Jan-2019 11:10	08-Jan-2019 14:30
Compound	Method	LOR	Unit	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □ □ □	EM1900131-001	EM1900131-004	EM1900131-011	EM1900131-013	EM1900131-020
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	4	9	4.4	7.1	5.7	6.1	4.3
EG005T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	20	<5	7	<5	60	6
Cadmium	EG005T	1	mg/kg	----	3	<1	<1	<1	<1	<1
Copper	EG005T	5	mg/kg	----	100	9	<5	<5	<5	<5
Lead	EG005T	5	mg/kg	----	300	24	11	<5	9	20
Molybdenum	EG005T	2	mg/kg	----	40	2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	60	2	10	<2	4	<2
Selenium	EG005T	5	mg/kg	----	10	<5	<5	<5	<5	<5
Silver	EG005T	2	mg/kg	----	10	<2	<2	<2	<2	<2
Tin	EG005T	5	mg/kg	----	50	<5	<5	<5	<5	<5
Zinc	EG005T	5	mg/kg	----	200	13	<5	<5	<5	<5
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	1	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	50	<1	<1	<1	<1	<1
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	450	240	120	<40	80	<40
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066-EM	0.1	mg/kg	----	2	<0.1	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	1	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	7	<0.2	<0.2	<0.2	<0.2	<0.2
EP074I: Volatile Halogenated Compounds										
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	1	<0.01	<0.01	<0.01	<0.01	<0.01
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	<0.03	<0.03	<0.03	<0.03
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	60	<1	<1	<1	<1	<1



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

				Client sample ID		CPT_MW06_0 80119_0.2	CPT_MW06_0 80119_2.0	CPT045_MW0 5_080119_0.2	CPT045_MW0 5_080119_1.0	CPT040B_MW 04_080119_0. 2
Sampling date/time				□ □ □ □ □ □	□ □ □ □ □ □	08-Jan-2019 08:10	08-Jan-2019 08:25	08-Jan-2019 11:00	08-Jan-2019 11:10	08-Jan-2019 14:30
Compound	Method	LOR	Unit	□ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □ □ □ □ □	EM1900131-001	EM1900131-004	EM1900131-011	EM1900131-013	EM1900131-020
EP075B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	1	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	20	<0.5	<0.5	<0.5	<0.5	<0.5
EP075I: Organochlorine Pesticides										
Sum of organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	<0.03	<0.03	<0.03	0.14
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	100	<10	<10	<10	<10	<10
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	1000	<50	<50	<50	<50	<50

Table 2: Soil Hazard Categorisation Thresholds : Category B:

Client sample ID

Sub-Matrix: SOIL				Client sample ID		CPT040B_MW 04_080119_0. 5	----	----	----	----
				Sampling date/time						
Compound	Method	LOR	Unit	□□□□ □□ □□ □ □□ □	□□□□ □□ □□□□ □□ □	08-Jan-2019 14:30 EM1900131-021	----	----	----	----
EA001: pH in soil using 0.01M CaCl extract										
pH (CaCl2)	EA001	0.1	pH Unit	2	12.5	5.1	----	----	----	----
EG005T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	----	2000	89	----	----	----	----
Cadmium	EG005T	1	mg/kg	----	400	<1	----	----	----	----
Copper	EG005T	5	mg/kg	----	20000	<5	----	----	----	----
Lead	EG005T	5	mg/kg	----	6000	11	----	----	----	----
Molybdenum	EG005T	2	mg/kg	----	4000	<2	----	----	----	----
Nickel	EG005T	2	mg/kg	----	12000	18	----	----	----	----
Selenium	EG005T	5	mg/kg	----	200	<5	----	----	----	----
Silver	EG005T	2	mg/kg	----	720	<2	----	----	----	----
Zinc	EG005T	5	mg/kg	----	140000	5	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	300	<0.1	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<0.5	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	10000	<1	----	----	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	40000	240	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Benzene	EP074-UT	0.2	mg/kg	----	16	<0.2	----	----	----	----
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	240	<0.2	----	----	----	----
EP074I: Volatile Halogenated Compounds										
Vinyl chloride	EP074-UT	0.02	mg/kg	----	4.8	<0.02	----	----	----	----
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	11	<0.02	----	----	----	----
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	50	<0.01	----	----	----	----
EP075A: Phenolic Compounds (Halogenated)										
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	320	<0.03	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)										
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	2200	<1	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons										



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL				Client sample ID		CPT040B_MW 04_080119_0. 5	----	----	----	----
				Sampling date/time						
				08-Jan-2019 14:30						
Compound	Method	LOR	Unit	□□□□ □□ □□ □	□□□□ □□ □□ □	EM1900131-021	-----	-----	-----	-----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	20	<0.5	----	----	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	400	<0.5	----	----	----	----
EP075I: Organochlorine Pesticides										
Heptachlor	EP075-EM	0.03	mg/kg	----	4.8	<0.03	----	----	----	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	4.8	<0.03	----	----	----	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	<0.05	----	----	----	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	16	<0.03	----	----	----	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	50	<0.03	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	2600	<10	----	----	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	40000	<50	----	----	----	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL				Client sample ID		CPT040B_MW 04_080119_0. 5	08-Jan-2019 14:30	EM1900131-021	----	----	----	----
Sampling date/time				□□□□ □□	□□□□ □□							
Compound	Method	LOR	Unit	□□ □□ □□ □	□□□□ □□ □							
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	4	9	5.1	----	----	----	----	----	
EG005T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	500	89	----	----	----	----	----	
Cadmium	EG005T	1	mg/kg	----	100	<1	----	----	----	----	----	
Copper	EG005T	5	mg/kg	----	5000	<5	----	----	----	----	----	
Lead	EG005T	5	mg/kg	----	1500	11	----	----	----	----	----	
Molybdenum	EG005T	2	mg/kg	----	1000	<2	----	----	----	----	----	
Nickel	EG005T	2	mg/kg	----	3000	18	----	----	----	----	----	
Selenium	EG005T	5	mg/kg	----	50	<5	----	----	----	----	----	
Silver	EG005T	2	mg/kg	----	180	<2	----	----	----	----	----	
Tin	EG005T	5	mg/kg	----	500	<5	----	----	----	----	----	
Zinc	EG005T	5	mg/kg	----	35000	5	----	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	75	<0.1	----	----	----	----	----	
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	----	----	----	----	----	
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	----	----	----	----	----	
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	10000	240	----	----	----	----	----	
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	4	<0.2	----	----	----	----	----	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	70	<0.2	----	----	----	----	----	
EP074I: Volatile Halogenated Compounds												
Vinyl chloride	EP074-UT	0.02	mg/kg	----	1.2	<0.02	----	----	----	----	----	
Hexachlorobutadiene	EP074-UT	0.02	mg/kg	----	2.8	<0.02	----	----	----	----	----	
Sum of other chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	10	<0.01	----	----	----	----	----	
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	----	----	----	----	----	
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	560	<1	----	----	----	----	----	



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL				Client sample ID		CPT040B_MW 04_080119_0. 5	----	----	----	----
				Sampling date/time						
Compound	Method	LOR	Unit			08-Jan-2019 14:30	----	----	----	----
EM1900131-021										
EP075B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075-EM	0.5	mg/kg	----	5	<0.5	----	----	----	----
Sum of polycyclic aromatic hydrocarbons	EP075-EM-SUM	0.5	mg/kg	----	100	<0.5	----	----	----	----
EP075I: Organochlorine Pesticides										
Heptachlor	EP075-EM	0.03	mg/kg	----	1.2	<0.03	----	----	----	----
Sum of Aldrin + Dieldrin	EP075-EM-SUM	0.03	mg/kg	----	1.2	<0.03	----	----	----	----
Sum of DDD + DDE + DDT	EP075-EM-SUM	0.05	mg/kg	----	50	<0.05	----	----	----	----
Chlordane	EP075-EM-SUM	0.03	mg/kg	----	4	<0.03	----	----	----	----
Sum of other organochlorine pesticides	EP075-EM-SUM	0.03	mg/kg	----	10	<0.03	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP074-UT	10	mg/kg	----	650	<10	----	----	----	----
C10 - C36 Fraction (sum)	EP071-EM	50	mg/kg	----	10000	<50	----	----	----	----



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL				Client sample ID		CPT040B_MW 04_080119_0. 5	08-Jan-2019 14:30	EM1900131-021	----	----	----	----
Sampling date/time				□□□□ □□	□□□□ □□							
Compound	Method	LOR	Unit	□□ □□	□□□□							
EA001: pH in soil using 0.01M CaCl extract												
pH (CaCl2)	EA001	0.1	pH Unit	4	9	5.1	----	----	----	----		
EG005T: Total Metals by ICP-AES												
Arsenic	EG005T	5	mg/kg	----	20	89	----	----	----	----		
Cadmium	EG005T	1	mg/kg	----	3	<1	----	----	----	----		
Copper	EG005T	5	mg/kg	----	100	<5	----	----	----	----		
Lead	EG005T	5	mg/kg	----	300	11	----	----	----	----		
Molybdenum	EG005T	2	mg/kg	----	40	<2	----	----	----	----		
Nickel	EG005T	2	mg/kg	----	60	18	----	----	----	----		
Selenium	EG005T	5	mg/kg	----	10	<5	----	----	----	----		
Silver	EG005T	2	mg/kg	----	10	<2	----	----	----	----		
Tin	EG005T	5	mg/kg	----	50	<5	----	----	----	----		
Zinc	EG005T	5	mg/kg	----	200	5	----	----	----	----		
EG035T: Total Recoverable Mercury by FIMS												
Mercury	EG035T	0.1	mg/kg	----	1	<0.1	----	----	----	----		
EG048: Hexavalent Chromium (Alkaline Digest)												
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1	<0.5	----	----	----	----		
EK026SF: Total CN by Segmented Flow Analyser												
Total Cyanide	EK026SF	1	mg/kg	----	50	<1	----	----	----	----		
EK040T: Fluoride Total												
Fluoride	EK040T	40	mg/kg	----	450	240	----	----	----	----		
EP066: Polychlorinated Biphenyls (PCB)												
Total Polychlorinated biphenyls	EP066-EM	0.1	mg/kg	----	2	<0.1	----	----	----	----		
EP074A: Monocyclic Aromatic Hydrocarbons												
Benzene	EP074-UT	0.2	mg/kg	----	1	<0.2	----	----	----	----		
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	----	7	<0.2	----	----	----	----		
EP074I: Volatile Halogenated Compounds												
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	----	1	<0.01	----	----	----	----		
EP075A: Phenolic Compounds (Halogenated)												
Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	----	1	<0.03	----	----	----	----		
EP075A: Phenolic Compounds (Non-halogenated)												
Sum of Phenols (non-halogenated)	EP075-EM-SUM	1	mg/kg	----	60	<1	----	----	----	----		

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840.



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900131 | Page | : 1 of 20 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 08-Jan-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 10-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 17-Jan-2019 |
| Sampler | : SM | | |
| Site | : GIJPP Groundwater Study | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 28 | | |
| No. of samples analysed | : 16 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□□□ □□ □□

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

□□□□□□

Senior Acid Sulfate Soil Chemist
Senior Inorganic Chemist
2IC Organic Chemist
2IC Organic Chemist

□□□ □□□ □□ □□ □

Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2133925) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 4.4 | 4.4 | 0.00 | 0% - 20% |
| EM1900337-001 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 6.8 | 6.9 | 1.46 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2134794) | | | | | | | | | |
| EM1900131-016 | CPT045_MW05_080119_2.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 5 | 3 | 41.5 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 5.6 | 5.9 | 5.22 | 0% - 20% |
| EB1900263-001 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 8.4 | 8.3 | 1.20 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2134794) | | | | | | | | | |
| EM1900131-016 | CPT045_MW05_080119_2.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | <0.005 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EB1900263-001 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.038 | 0.037 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | 24 | 23 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2131688) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EA055: Moisture Content | ---- | 0.1 | % | 4.7 | 4.9 | 4.28 | No Limit |
| EM1900159-005 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 10.6 | 10.4 | 2.00 | 0% - 50% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2135802) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | 2 | 3 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|---------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005T: Total Metals by ICP-AES (QC Lot: 2135802) - continued | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 2 | 3 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 7 | 35.8 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 9 | 11 | 19.8 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 24 | 25 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 13 | 13 | 0.00 | No Limit |
| EM1900225-004 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 38 | 34 | 10.2 | 0% - 50% |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 6 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 25 | 27 | 9.19 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 103 | 102 | 1.52 | 0% - 20% |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 135 | 136 | 0.00 | 0% - 20% |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2135801) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900225-004 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | 0.2 | 0.2 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2134649) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900225-004 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2134669) | | | | | | | | | |
| EM1900225-004 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900225-001 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2131410) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 240 | 200 | 18.3 | No Limit |
| EM1900161-003 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 60 | 60 | 0.00 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2131402) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2129665) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|---------------------|-------------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2129665) - continued | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900161-005 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2129665) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900161-005 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2129665) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EM1900161-005 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|---------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2129665) - continued | | | | | | | | | |
| EM1900161-005 | Anonymous | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit | | |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2131400) | | | | | | | | | |
| EM1900239-002 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2131400) | | | | | | | | | |
| EM1900239-002 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|---------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2131400) - continued | | | | | | | | | |
| EM1900239-002 | Anonymous | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2131400) | | | | | | | | | |
| EM1900239-002 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | 0.6 | 0.6 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|---------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2131400) - continued | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2131400) | | | | | | | | | |
| EM1900239-002 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|---------------------|---|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2131400) - continued | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2129665) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900161-005 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2131401) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2129665) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900161-005 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2131401) | | | | | | | | | |
| EM1900131-001 | CPT_MW06_080119_0.2 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2131307) | | | | | | | | | |
| EM1900192-001 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.63 | 7.53 | 1.32 | 0% - 20% |
| EM1900146-001 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 8.19 | 9.37 | 13.4 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2133948) | | | | | | | | | |
| EM1900018-002 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.024 | 0.024 | 0.00 | 0% - 20% |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 0.001 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.020 | 0.021 | 0.00 | 0% - 20% |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.046 | 0.043 | 6.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900152-007 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | 0.0002 | 0.0002 | 0.00 | No Limit |

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2133948) - continued | | | | | | | | | |
| EM1900152-007 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | 0.001 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.136 | 0.139 | 2.13 | 0% - 20% |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2133950) | | | | | | | | | |
| EM1900131-007 | CPT_QC307_080119 | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2133947) | | | | | | | | | |
| EM1900018-002 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900152-007 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2130497) | | | | | | | | | |
| EM1900131-007 | CPT_QC307_080119 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2131681) | | | | | | | | | |
| EM1900018-002 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EM1900143-006 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2131308) | | | | | | | | | |
| EM1900192-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.2 | 0.1 | 0.00 | No Limit |
| EM1900146-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 1.4 | 1.5 | 0.00 | 0% - 50% |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2129760) | | | | | | | | | |
| EM1900131-007 | CPT_QC307_080119 | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2129760) | | | | | | | | | |
| EM1900131-007 | CPT_QC307_080119 | EP074: 1.1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2129760) | | | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|-------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2129760) - continued | | | | | | | | | |
| EM1900131-007 | CPT_QC307_080119 | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2129760) | | | | | | | | | |
| EM1900131-007 | CPT_QC307_080119 | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2129761) | | | | | | | | | |
| EM1900131-007 | CPT_QC307_080119 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2129761) | | | | | | | | | |
| EM1900131-007 | CPT_QC307_080119 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2129761) | | | | | | | | | |
| EM1900131-007 | CPT_QC307_080119 | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|-------|-------------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA033-A: Actual Acidity (QCLot: 2134794) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 93.4 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2134794) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 94.6 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES (QCLot: 2135802) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 87.8 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 90.1 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 93.7 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 94.7 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 108 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 98.7 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 94.7 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 93.6 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 102 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 97.9 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2135801) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 78.6 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2134649) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 79.2 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2134669) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 103 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2131410) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 90.2 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2131402) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 106 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2129665) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 89.0 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 88.6 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 88.2 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 86.2 | 66 | 115 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2129665) - continued | | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 88.0 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 85.4 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2129665) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 94.3 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2129665) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 93.3 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 91.9 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 91.7 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 91.4 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 91.2 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 86.9 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 89.7 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 90.2 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 94.0 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 88.4 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 91.9 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 88.2 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 88.6 | 71 | 118 |
| EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 93.7 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 80.5 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.7 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 87.9 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 91.1 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 86.9 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2131400) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 94.6 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 106 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 109 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 115 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 113 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 101 | 65 | 124 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 105 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 101 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2131400) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 97.4 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 96.8 | 65 | 126 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2131400) - continued | | | | | | | | |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 101 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 107 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 102 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 140 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 112 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 110 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 109 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 91.8 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2131400) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 112 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 105 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 110 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 108 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 1 mg/kg | 112 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 109 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 114 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 125 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 116 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 113 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 104 | 72 | 134 |
| EP075-EM: Dibenzo(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 105 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 105 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2131400) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 100 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 86.6 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 106 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 101 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 109 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 98.0 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 97.9 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 97.4 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 94.2 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 95.9 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 93.6 | 64 | 137 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 104 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 102 | 72 | 132 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2133947) - continued | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 100 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2130497) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 106 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2131681) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 104 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2131308) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 98.0 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2129792) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 110 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2129760) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 102 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2129760) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 82.5 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 79.5 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 99.5 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 81.0 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 91.1 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 77.9 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 74.5 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 92.9 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 102 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 98.9 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 80.8 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 92.1 | 76 | 112 |
| EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 110 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 75.4 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2129760) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 94.5 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 99.3 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 93.8 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 85.7 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2129760) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 91.5 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2129793) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 87.6 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 89.6 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 88.9 | 53 | 117 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2129793) - continued | | | | | | | | |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 89.7 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 90.6 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 89.0 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 91.7 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 92.8 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 92.8 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 91.4 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | 5 µg/L | 93.1 | 56 | 131 |
| | 205-82-3 | | | | | | | |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 93.9 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 93.3 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 94.7 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 93.8 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 94.3 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2130158) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 90.2 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 104 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 107 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 111 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 108 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 110 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 10 µg/L | 99.5 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5 | 2 | µg/L | <2 | 20 µg/L | 98.4 | 53 | 125 |
| | 8-90-2 | | | | | | | |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 100 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2130158) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 4 | µg/L | <4 | 10 µg/L | 48.4 | 18 | 51 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | 10 µg/L | 88.8 | 49 | 106 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | 20 µg/L | 80.3 | 41 | 91 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | 10 µg/L | 107 | 48 | 120 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | 10 µg/L | 98.6 | 47 | 128 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | 60 µg/L | 114 | 41 | 130 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | 60 µg/L | 44.9 | 19 | 49 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | 60 µg/L | 100 | 47 | 126 |
| EP075-EM: Dinoseb | 88-85-7 | 50 | µg/L | <50 | 60 µg/L | 98.6 | 49 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | 50 µg/L | 82.4 | 61 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2130158) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 10 µg/L | 97.4 | 57 | 126 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB) Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------|------|--------|--------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2130158) - continued | | | | | | | | |
| EP075-EM: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 97.1 | 62 | 134 |
| EP075-EM: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 94.1 | 58 | 133 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 95.0 | 60 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 93.0 | 59 | 132 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 97.6 | 61 | 137 |
| EP075-EM: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 10 µg/L | 100 | 59 | 130 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 112 | 59 | 135 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | 10 µg/L | 123 | 59 | 128 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2129761) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 89.4 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2129791) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 86.4 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 96.3 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 96.0 | 55 | 130 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2129761) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 88.6 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2129791) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 92.0 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 96.3 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 96.5 | 53 | 136 |
| EP080: BTEXN (QCLot: 2129761) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 86.6 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 92.8 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 92.0 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 102 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 103 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 100 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| Laboratory sample ID | | | | Matrix Spike (MS) Report | | | |
|---|---------------------|-----------------|-----------|--------------------------|-------------------|---------------------|------|
| | | | | Spike Concentration | Spike Recovery(%) | Recovery Limits (%) | |
| | | | | | MS | Low | High |
| Client sample ID | Method: Compound | CAS Number | | | | | |
| EG005T: Total Metals by ICP-AES (QCLot: 2135802) | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 89.2 | 78 | 124 |

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2135802) - continued | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 99.8 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 107 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 108 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 96.9 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 98.6 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 85.5 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 102 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2135801) | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 77.1 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2134649) | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | 89.0 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2134669) | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 102 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2131410) | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 86.0 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2131402) | | | | | | | |
| EM1900131-013 | CPT045_MW05_080119_1.0 | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 103 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2129665) | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 87.6 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 88.4 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2129665) | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 92.1 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 82.1 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 87.6 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2131400) | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 97.5 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 111 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 48.2 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2131400) | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 99.6 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 107 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2131400) | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 115 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 122 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2129665) | | | | | | | |



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------------|-------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2129665) - continued | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 80.9 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2131401) | | | | | | | |
| EM1900131-011 | CPT045_MW05_080119_0.2 | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 113 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 120 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 108 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2129665) | | | | | | | |
| EM1900131-004 | CPT_MW06_080119_2.0 | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 80.3 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2131401) | | | | | | | |
| EM1900131-011 | CPT045_MW05_080119_0.2 | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 120 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 113 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 106 | 44 | 126 |

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|-----------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2133948) | | | | | | | |
| EM1900018-002 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 102 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 101 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 94.1 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 99.1 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 95.4 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 101 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2133947) | | | | | | | |
| EM1900131-007 | CPT_QC307_080119 | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 101 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2130497) | | | | | | | |
| EM1900181-001 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 108 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2131681) | | | | | | | |
| EM1900131-007 | CPT_QC307_080119 | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 101 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2131308) | | | | | | | |
| EM1900146-002 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 105 | 70 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2129761) | | | | | | | |
| EM1900131-008 | CPT_QC407_080119 | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 78.0 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2129761) | | | | | | | |
| EM1900131-008 | CPT_QC407_080119 | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 75.9 | 44 | 122 |
| EP080: BTEXN (QCLot: 2129761) | | | | | | | |
| EM1900131-008 | CPT_QC407_080119 | EP080: Benzene | 71-43-2 | 20 µg/L | 86.7 | 68 | 130 |



Sub-Matrix: WATER

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080: BTEXN (QCLot: 2129761) - continued | | | | | | | |
| EM1900131-008 | CPT_QC407_080119 | EP080: Toluene | 108-88-3 | 20 µg/L | 92.9 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1900131**

Page : 1 of 14

Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Project : 60592634
Site : GIJPP Groundwater Study
Sampler : SM
Order number :

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 08-Jan-2019
Issue Date : 17-Jan-2019
No. of samples received : 28
No. of samples analysed : 16

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|----------------------------------|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| Container / Client Sample ID(s) | | | | | | |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural | | | | | | |
| CPT_QC307_080119 | ---- | ---- | ---- | 11-Jan-2019 | 08-Jan-2019 | 3 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 7 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 7 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 5 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 12 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 7 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 7 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 5 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 12 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001) | | 08-Jan-2019 | 15-Jan-2019 | 15-Jan-2019 | ✔ | 15-Jan-2019 | 15-Jan-2019 | ✔ |
| CPT_MW06_080119_0.2, CPT_MW06_080119_2.0, | | | | | | | | |
| CPT045_MW05_080119_0.2, CPT045_MW05_080119_1.0, | | | | | | | | |
| CPT040B_MW04_080119_0.2, CPT040B_MW04_080119_0.5 | | | | | | | | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|--|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT_MW06_080119_1.0,
CPT045_MW05_080119_0.5,
CPT040B_MW04_080119_1.0, | CPT_MW06_080119_3.0,
CPT045_MW05_080119_2.5,
CPT040B_MW04_080119_2.5 | 08-Jan-2019 | 15-Jan-2019 | 08-Jan-2020 | ✓ | 15-Jan-2019 | 15-Apr-2019 | ✓ |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT_MW06_080119_1.0,
CPT045_MW05_080119_0.5,
CPT040B_MW04_080119_1.0, | CPT_MW06_080119_3.0,
CPT045_MW05_080119_2.5,
CPT040B_MW04_080119_2.5 | 08-Jan-2019 | 15-Jan-2019 | 08-Jan-2020 | ✓ | 15-Jan-2019 | 15-Apr-2019 | ✓ |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT_MW06_080119_1.0,
CPT045_MW05_080119_0.5,
CPT040B_MW04_080119_1.0, | CPT_MW06_080119_3.0,
CPT045_MW05_080119_2.5,
CPT040B_MW04_080119_2.5 | 08-Jan-2019 | 15-Jan-2019 | 08-Jan-2020 | ✓ | 15-Jan-2019 | 15-Apr-2019 | ✓ |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT_MW06_080119_1.0,
CPT045_MW05_080119_0.5,
CPT040B_MW04_080119_1.0, | CPT_MW06_080119_3.0,
CPT045_MW05_080119_2.5,
CPT040B_MW04_080119_2.5 | 08-Jan-2019 | 15-Jan-2019 | 08-Jan-2020 | ✓ | 15-Jan-2019 | 15-Apr-2019 | ✓ |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT_MW06_080119_1.0,
CPT045_MW05_080119_0.5,
CPT040B_MW04_080119_1.0, | CPT_MW06_080119_3.0,
CPT045_MW05_080119_2.5,
CPT040B_MW04_080119_2.5 | 08-Jan-2019 | 15-Jan-2019 | 08-Jan-2020 | ✓ | 15-Jan-2019 | 15-Apr-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | ---- | ---- | ---- | 11-Jan-2019 | 22-Jan-2019 | ✓ |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 15-Jan-2019 | 07-Jul-2019 | ✓ | 15-Jan-2019 | 07-Jul-2019 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 15-Jan-2019 | 05-Feb-2019 | ✓ | 16-Jan-2019 | 05-Feb-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|--|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 15-Jan-2019 | 05-Feb-2019 | ✓ | 15-Jan-2019 | 22-Jan-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 14-Jan-2019 | 22-Jan-2019 | ✓ | 15-Jan-2019 | 28-Jan-2019 | ✓ |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 11-Jan-2019 | 05-Feb-2019 | ✓ | 15-Jan-2019 | 05-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 14-Jan-2019 | 22-Jan-2019 | ✓ | 14-Jan-2019 | 23-Feb-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 10-Jan-2019 | 15-Jan-2019 | ✓ | 10-Jan-2019 | 15-Jan-2019 | ✓ |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 10-Jan-2019 | 15-Jan-2019 | ✓ | 10-Jan-2019 | 15-Jan-2019 | ✓ |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 10-Jan-2019 | 15-Jan-2019 | ✓ | 10-Jan-2019 | 15-Jan-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 14-Jan-2019 | 22-Jan-2019 | ✓ | 14-Jan-2019 | 23-Feb-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 14-Jan-2019 | 22-Jan-2019 | ✓ | 14-Jan-2019 | 23-Feb-2019 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 14-Jan-2019 | 22-Jan-2019 | ✓ | 14-Jan-2019 | 23-Feb-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 14-Jan-2019 | 22-Jan-2019 | ✓ | 14-Jan-2019 | 23-Feb-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 10-Jan-2019 | 15-Jan-2019 | ✓ | 10-Jan-2019 | 15-Jan-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 14-Jan-2019 | 22-Jan-2019 | ✓ | 14-Jan-2019 | 23-Feb-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 10-Jan-2019 | 15-Jan-2019 | ✓ | 10-Jan-2019 | 15-Jan-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT_MW06_080119_0.2,
CPT045_MW05_080119_0.2,
CPT040B_MW04_080119_0.2, | CPT_MW06_080119_2.0,
CPT045_MW05_080119_1.0,
CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 14-Jan-2019 | 22-Jan-2019 | ✓ | 14-Jan-2019 | 23-Feb-2019 | ✓ |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
CPT_QC307_080119 | 08-Jan-2019 | ---- | ---- | ---- | 11-Jan-2019 | 08-Jan-2019 | ✖ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F)
CPT_QC307_080119 | 08-Jan-2019 | ---- | ---- | ---- | 14-Jan-2019 | 07-Jul-2019 | ✔ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
CPT_QC307_080119 | 08-Jan-2019 | ---- | ---- | ---- | 15-Jan-2019 | 05-Feb-2019 | ✓ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Clear Plastic Bottle - NaOH Filtered (EG050F)
CPT_QC307_080119 | 08-Jan-2019 | ---- | ---- | ---- | 10-Jan-2019 | 05-Feb-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| White Plastic Bottle-NaOH (EK026SF)
CPT_QC307_080119 | 08-Jan-2019 | ---- | ---- | ---- | 11-Jan-2019 | 22-Jan-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
CPT_QC307_080119 | 08-Jan-2019 | ---- | ---- | ---- | 11-Jan-2019 | 05-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
CPT_QC307_080119 | 08-Jan-2019 | 10-Jan-2019 | 15-Jan-2019 | ✓ | 11-Jan-2019 | 19-Feb-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC307_080119 | 08-Jan-2019 | 10-Jan-2019 | 22-Jan-2019 | ✓ | 10-Jan-2019 | 22-Jan-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC307_080119 | 08-Jan-2019 | 10-Jan-2019 | 22-Jan-2019 | ✓ | 10-Jan-2019 | 22-Jan-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC307_080119 | 08-Jan-2019 | 10-Jan-2019 | 22-Jan-2019 | ✓ | 10-Jan-2019 | 22-Jan-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC307_080119 | 08-Jan-2019 | 10-Jan-2019 | 22-Jan-2019 | ✓ | 10-Jan-2019 | 22-Jan-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
CPT_QC307_080119 | 08-Jan-2019 | 10-Jan-2019 | 15-Jan-2019 | ✓ | 11-Jan-2019 | 19-Feb-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC307_080119 | 08-Jan-2019 | 11-Jan-2019 | 15-Jan-2019 | ✓ | 11-Jan-2019 | 20-Feb-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC307_080119 | 08-Jan-2019 | 11-Jan-2019 | 15-Jan-2019 | ✓ | 11-Jan-2019 | 20-Feb-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC307_080119 | 08-Jan-2019 | 11-Jan-2019 | 15-Jan-2019 | ✓ | 11-Jan-2019 | 20-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC307_080119 | 08-Jan-2019 | 10-Jan-2019 | 15-Jan-2019 | ✓ | 11-Jan-2019 | 19-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC307_080119, CPT_QC407_080119,
CPT_QC511, CPT_QC512 | 08-Jan-2019 | 10-Jan-2019 | 22-Jan-2019 | ✓ | 10-Jan-2019 | 22-Jan-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC307_080119 | 08-Jan-2019 | 10-Jan-2019 | 15-Jan-2019 | ✓ | 11-Jan-2019 | 19-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC307_080119, CPT_QC407_080119,
CPT_QC511, CPT_QC512 | 08-Jan-2019 | 10-Jan-2019 | 22-Jan-2019 | ✓ | 10-Jan-2019 | 22-Jan-2019 | ✓ |
| EP080: BTEXN | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC307_080119, CPT_QC407_080119,
CPT_QC511, CPT_QC512 | 08-Jan-2019 | 10-Jan-2019 | 22-Jan-2019 | ✓ | 10-Jan-2019 | 22-Jan-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 6 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 10 | 20.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 6 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Laboratory Control Samples (LCS) | | | | | | | |
|---|------------|---|----|--------|------|---|--------------------------------|
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

Method Blanks (MB)



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 7 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 7 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 5 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 12 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 0 | 1 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|--|
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazine. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |

| Preparation Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|---|
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |



| <i>Preparation Methods</i> | <i>Method</i> | <i>Matrix</i> | <i>Method Descriptions</i> |
|---|---------------|---------------|--|
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

ANZ FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|---------------------|--|----------|--|-------------|--|----|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: GUPP Groundwater Study | | SAMPLER: S. Maculoch | | Destination Laboratory | |
| PROJECT MANAGER (PM): [REDACTED] | | SITE: 60592634 | | MOBILE: [REDACTED] | | ALS | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: EN/096/18 | | EMAIL REPORT TO: [REDACTED] | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | Notes: e.g. Highly contaminated sample
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | |
| COOLER SEAL (circle appropriate)
Inhibit Yes No N/A | | | | | | | |
| SAMPLE TEMPERATURE
CHILLED: Yes No | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | CPT-MW11-090119-0.2 | S | 09.01.19 | 0840 | | 15 | 15 |
| 2 | CPT-MW11-090119-0.5 | S | | 0845 | | | |
| 3 | CPT-MW11-090119-1.0 | S | | 0850 | | | |
| 4 | CPT-MW11-090119-2.0 | S | | 0855 | | | |
| 5 | CPT-MW11-090119-3.0 | S | | 0900 | | | |
| 6 | CPT-MW11-090119-4.0 | S | | 0905 | | | |
| 7 | CPT-02101-090119 | S | | - | | 15 | |
| 8 | CPT-02309-090119 | W | | - | | 8B | |
| 9 | CPT-02408-090119 | W | | - | | 2V | |
| 10 | CPT-02513-090119 | W | | - | | 1V | |
| 11 | CPT-02514-090119 | W | | - | | 1V | |
| 12 | CPT-02201-090119 | S | | - | | 15 | |
| 13 | CPT-MW15-090119-0.2 | S | | 1145 | | 15B | |
| 14 | CPT-MW15-090119-0.5 | S | | 1120 | | | |
| 15 | CPT-MW15-090119-1.0 | S | | 1125 | | | |
| 16 | CPT-MW15-090119-2.0 | S | | 1130 | | | |
| 17 | CPT-MW15-090119-3.0 | S | | 1135 | | | |
| 18 | CPT-MW15-090119-4.0 | S | | 1140 | | | |
| 19 | CPT-MW16-090119-0.2 | S | 090119 | 1830 | | | |

Environmental Division
Melbourne
Work Order Reference
EM1900178



Telephone: +61-3-8549 9600

Forwarded to
Secondary Lab
Initials **AM** Date **1/11**

COC Page of

Please freeze bags for Acid sulfate.

[REDACTED]

From: [REDACTED]@aecom.com>
Sent: Thursday, 10 January 2019 10:03 AM
To: Melbourne Enviro Services
Cc: [REDACTED]
Subject: FW: On Hold - EM1900178 - AECOMAU (60592634)

Hi,

Please find analysis for EM1900178 below. Thanks.

[REDACTED]
Senior Environmental Engineer
[REDACTED]
[REDACTED]@aecom.com

AECOM

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T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

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From: [REDACTED]
Sent: Thursday, 10 January 2019 10:00 AM
To: [REDACTED]
Subject: RE: On Hold - EM1900178 - AECOMAU (60592634)

Hi [REDACTED]

Please analyse:

- 1 CPT_MW11_090119_0.2= IWRG621
- 3 CPT_MW11_080119_1.0 = IWRG621
- 12 CPT_MW15_090119_0.2 = IWRG621
- 13 CPT_MW15_090119_0.5 = IWRG621
- 18 CPT_MW16_090119_0.2 = IWRG621
- 19 CPT_MW16_090119_0.5 = IWRG621
- 2 CPT_MW11_090119_0.5 = Chromium Suite (EA033)
- 4 CPT_MW11_090119_2.0 = Chromium Suite (EA033)
- 12 CPT_MW15_090119_0.2 = Chromium Suite (EA033)
- 14 CPT_MW15_090119_1.0 = Chromium Suite (EA033)
- 18 CPT_MW16_090119_0.2 = Chromium Suite (EA033)
- 21 CPT_MW16_090119_2.0 = Chromium Suite (EA033)
- 7 QC101_090119 = IWRG621
- QC201_090119 = IWRG621 (Triplicate, please forward to Eurofins)
- 8 QC308_090119 = IWRG621 water equivalent
- 9 QC408_090119 = TPH(C6-C9)/BTEXN
- 10 QC513_090119 = TPH(C6-C9)/BTEXN
- 11 QC514_090119 = TPH(C6-C9)/BTEXN

At standard TAT. Thanks.

Senior Environmental Engineer

@aecom.com

AECOM

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aecom.com

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From: [REDACTED]@alsglobal.com]
Sent: Thursday, 10 January 2019 8:30 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: On Hold - EM1900178 - AECOMAU (60592634)

Hi [REDACTED]

Please see attached samples received without analysis.

Thanks

Regards

Client Services – Springvale

Environmental



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@alsglobal.com

2-4 Westall Rd
Springvale Vic 3171
Australia

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CERTIFICATE OF ANALYSIS

Work Order : **EM1900178**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : SM
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 23
No. of samples analysed : 15

Page : 1 of 22
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 09-Jan-2019 17:05
Date Analysis Commenced : 11-Jan-2019
Issue Date : 18-Jan-2019 15:35



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| Signatories | Position | Accreditation Category |
|--|-------------------------------------|---|
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | 2IC Organic Chemist | Melbourne Organics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- EG035T: EM1900178 #3 Poor matrix spike recovery for total mercury due to sample matrix.
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW11_090119_0.2 | CPT_MW11_090119_0.5 | CPT_MW11_090119_1.0 | CPT_MW11_090119_2.0 | CPT_QC101_090119 |
|--|------------|-------|-------------|------------------|---------------------|---------------------|---------------------|---------------------|-------------------|
| Client sampling date / time | | | | | 09-Jan-2019 08:40 | 09-Jan-2019 08:45 | 09-Jan-2019 08:50 | 09-Jan-2019 08:55 | 09-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900178-001 | EM1900178-002 | EM1900178-003 | EM1900178-004 | EM1900178-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 5.0 | ---- | 6.3 | ---- | 5.3 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 4.3 | ---- | 6.2 | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | 45 | ---- | 2 | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | 0.07 | ---- | <0.02 | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | 0.012 | ---- | <0.005 | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | <10 | ---- | <10 | ---- |
| EA033-D: Retained Acidity | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | | ---- | <0.02 | ---- | ---- | ---- |
| HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | | ---- | <0.02 | ---- | ---- | ---- |
| Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | | ---- | <0.02 | ---- | ---- | ---- |
| acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | | ---- | <10 | ---- | ---- | ---- |
| sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | | ---- | <0.02 | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | ---- | 1.5 | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | 0.09 | ---- | <0.02 | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | 56 | ---- | <10 | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | 4 | ---- | <1 | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | 0.09 | ---- | <0.02 | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | 56 | ---- | <10 | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | 4 | ---- | <1 | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 11.2 | ---- | 21.0 | ---- | 12.8 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| Lead | 7439-92-1 | 5 | mg/kg | | 8 | ---- | 7 | ---- | 7 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | <2 | ---- | <2 | ---- | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | | <2 | ---- | 6 | ---- | <2 |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | ---- | <2 | ---- | <2 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW11_090119_0.2 | CPT_MW11_090119_0.5 | CPT_MW11_090119_1.0 | CPT_MW11_090119_2.0 | CPT_QC101_090119 |
|---|-------------------|------|-------|------------------|---------------------|---------------------|---------------------|---------------------|-------------------|
| Client sampling date / time | | | | | 09-Jan-2019 08:40 | 09-Jan-2019 08:45 | 09-Jan-2019 08:50 | 09-Jan-2019 08:55 | 09-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900178-001 | EM1900178-002 | EM1900178-003 | EM1900178-004 | EM1900178-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EG005T: Total Metals by ICP-AES - Continued | | | | | | | | | |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | ---- | <0.1 | ---- | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | 90 | ---- | 180 | ---- | 80 | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | ---- | <0.1 | ---- | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | ---- | <0.2 | ---- | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | <0.2 | ---- | <0.2 | ---- | <0.2 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | ---- | <0.01 | ---- | <0.01 | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | ---- | <0.4 | ---- | <0.4 | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | ---- | <0.01 | ---- | <0.01 | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | ---- | <0.01 | ---- | <0.01 | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | ---- | <0.01 | ---- | <0.01 | <0.01 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW11_090119_
0.2 | CPT_MW11_090119_
0.5 | CPT_MW11_090119_
1.0 | CPT_MW11_090119_
2.0 | CPT_QC101_090119 |
|---|-------------------|------|-------|------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------|
| Client sampling date / time | | | | | 09-Jan-2019 08:40 | 09-Jan-2019 08:45 | 09-Jan-2019 08:50 | 09-Jan-2019 08:55 | 09-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900178-001 | EM1900178-002 | EM1900178-003 | EM1900178-004 | EM1900178-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | ---- | <0.04 | ---- | <0.04 | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | ---- | <0.01 | ---- | <0.01 | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 | <0.02 |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 | <0.02 |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 | <0.02 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | ---- | <0.01 | ---- | <0.01 | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | <0.01 | ---- | <0.01 | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | <0.01 | ---- | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 | <0.03 |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 | <0.03 |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 | <0.03 |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 | <0.05 |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 | <0.05 |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 | <0.03 |
| 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | ---- | <0.2 | ---- | <0.2 | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 | <1 |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 | <1 |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 | <5 |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 | <5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW11_090119_
0.2 | CPT_MW11_090119_
0.5 | CPT_MW11_090119_
1.0 | CPT_MW11_090119_
2.0 | CPT_QC101_090119 |
|---|-------------------|------|-------|------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------|
| Client sampling date / time | | | | | 09-Jan-2019 08:40 | 09-Jan-2019 08:45 | 09-Jan-2019 08:50 | 09-Jan-2019 08:55 | 09-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900178-001 | EM1900178-002 | EM1900178-003 | EM1900178-004 | EM1900178-007 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds (Non-halogenated) - Continued | | | | | | | | | |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | ---- | 0.6 | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | ---- | 1.2 | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |

| Client sampling date / time | | | | 09-Jan-2019 08:40 | 09-Jan-2019 08:45 | 09-Jan-2019 08:50 | 09-Jan-2019 08:55 | 09-Jan-2019 09:00 |
|---|----------------------|------|-------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Compound | CAS Number | LOR | Unit | EM1900178-001 | EM1900178-002 | EM1900178-003 | EM1900178-004 | EM1900178-007 |
| | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | <10 | ---- | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | <10 | ---- | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | ---- | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | ---- | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | ---- | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | <10 | ---- | <10 |
| EP066S: PCB Surrogate | | | | | | | | |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT_MW11_090119_0.2 | CPT_MW11_090119_0.5 | CPT_MW11_090119_1.0 | CPT_MW11_090119_2.0 | CPT_QC101_090119 |
|---|------------|-------|------|---------------------|---------------------|---------------------|---------------------|-------------------|
| Client sampling date / time | | | | 09-Jan-2019 08:40 | 09-Jan-2019 08:45 | 09-Jan-2019 08:50 | 09-Jan-2019 08:55 | 09-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1900178-001 | EM1900178-002 | EM1900178-003 | EM1900178-004 | EM1900178-007 |
| | | | | Result | Result | Result | Result | Result |
| EP066S: PCB Surrogate - Continued | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 110 | ---- | 101 | ---- | 109 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 84.3 | ---- | 77.5 | ---- | 82.5 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 76.7 | ---- | 71.0 | ---- | 75.7 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 90.9 | ---- | 84.2 | ---- | 90.4 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 96.8 | ---- | 91.6 | ---- | 103 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 79.1 | ---- | 73.2 | ---- | 80.4 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 97.9 | ---- | 35.4 | ---- | 74.6 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 93.0 | ---- | 88.3 | ---- | 95.0 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 86.5 | ---- | 81.6 | ---- | 88.9 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 103 | ---- | 96.9 | ---- | 104 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 98.7 | ---- | 92.6 | ---- | 100 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 97.5 | ---- | 90.7 | ---- | 99.4 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW15_090119_
0.2 | CPT_MW15_090119_
0.5 | CPT_MW15_090119_
1.0 | CPT_MW16_090119_
0.2 | CPT_MW16_090119_
0.5 |
|---|------------|-------|-------------|------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Client sampling date / time | | | | | 09-Jan-2019 11:15 | 09-Jan-2019 11:20 | 09-Jan-2019 11:25 | 09-Jan-2019 13:30 | 09-Jan-2019 13:35 |
| Compound | CAS Number | LOR | Unit | | EM1900178-012 | EM1900178-013 | EM1900178-014 | EM1900178-018 | EM1900178-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 5.6 | 6.0 | ---- | 5.1 | 6.1 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | 5.7 | ---- | 5.9 | 5.2 | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | 10 | ---- | 6 | 20 | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | <0.02 | ---- | <0.02 | 0.03 | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | 0.008 | ---- | <0.005 | 0.006 | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | <10 | ---- | <10 | <10 | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | 1.5 | ---- | 1.5 | 1.5 | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | 0.02 | ---- | <0.02 | 0.04 | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | 15 | ---- | <10 | 24 | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | 1 | ---- | <1 | 2 | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | 0.02 | ---- | <0.02 | 0.04 | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | 15 | ---- | <10 | 24 | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | 1 | ---- | <1 | 2 | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 14.4 | 24.8 | ---- | 23.9 | 28.2 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | <5 | <5 | ---- | 6 | <5 |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | | 11 | 13 | ---- | 22 | 25 |
| Lead | 7439-92-1 | 5 | mg/kg | | 10 | 8 | ---- | 16 | 15 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | <2 | <2 | ---- | <2 | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | | 15 | 16 | ---- | 22 | 19 |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | <2 | ---- | <2 | <2 |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | | 11 | 7 | ---- | 25 | 7 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |



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|---|-------------------|------|-------|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW15_090119_0.2 | CPT_MW15_090119_0.5 | CPT_MW15_090119_1.0 | CPT_MW16_090119_0.2 | CPT_MW16_090119_0.5 |
| Client sampling date / time | | | | | 09-Jan-2019 11:15 | 09-Jan-2019 11:20 | 09-Jan-2019 11:25 | 09-Jan-2019 13:30 | 09-Jan-2019 13:35 |
| Compound | CAS Number | LOR | Unit | | EM1900178-012 | EM1900178-013 | EM1900178-014 | EM1900178-018 | EM1900178-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | 1 | <1 | ---- | <1 | 2 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 150 | 170 | ---- | 150 | 170 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | <0.2 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | <0.4 | ---- | <0.4 | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | <0.04 | ---- | <0.04 | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW15_090119_
0.2 | CPT_MW15_090119_
0.5 | CPT_MW15_090119_
1.0 | CPT_MW16_090119_
0.2 | CPT_MW16_090119_
0.5 |
|---|-------------------|------|-------|------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Client sampling date / time | | | | | 09-Jan-2019 11:15 | 09-Jan-2019 11:20 | 09-Jan-2019 11:25 | 09-Jan-2019 13:30 | 09-Jan-2019 13:35 |
| Compound | CAS Number | LOR | Unit | | EM1900178-012 | EM1900178-013 | EM1900178-014 | EM1900178-018 | EM1900178-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | ---- | <0.2 | <0.2 | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | ---- | <5 | <5 | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | ---- | <5 | <5 | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | ---- | <5 | <5 | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | ---- | <5 | <5 | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | ---- | <5 | <5 | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW15_090119_
0.2 | CPT_MW15_090119_
0.5 | CPT_MW15_090119_
1.0 | CPT_MW16_090119_
0.2 | CPT_MW16_090119_
0.5 |
|--|-------------------|------|-------|------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Client sampling date / time | | | | | 09-Jan-2019 11:15 | 09-Jan-2019 11:20 | 09-Jan-2019 11:25 | 09-Jan-2019 13:30 | 09-Jan-2019 13:35 |
| Compound | CAS Number | LOR | Unit | | EM1900178-012 | EM1900178-013 | EM1900178-014 | EM1900178-018 | EM1900178-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | 0.6 | 0.6 | ---- | 0.6 | 0.6 | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | 1.2 | 1.2 | ---- | 1.2 | 1.2 | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 | <0.05 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW15_090119_
0.2 | CPT_MW15_090119_
0.5 | CPT_MW15_090119_
1.0 | CPT_MW16_090119_
0.2 | CPT_MW16_090119_
0.5 |
|--|--------------------------|-------|-------|------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Client sampling date / time | | | | | 09-Jan-2019 11:15 | 09-Jan-2019 11:20 | 09-Jan-2019 11:25 | 09-Jan-2019 13:30 | 09-Jan-2019 13:35 |
| Compound | CAS Number | LOR | Unit | | EM1900178-012 | EM1900178-013 | EM1900178-014 | EM1900178-018 | EM1900178-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | ---- | <10 | <10 | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | ---- | <50 | <50 | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | ---- | <10 | <10 | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | ---- | <100 | <100 | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | ---- | <100 | <100 | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | <50 | ---- | <50 | <50 | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | ---- | <50 | <50 | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | 110 | <100 | ---- | <100 | <100 | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | ---- | <100 | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | 110 | <50 | ---- | <50 | <50 | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | <50 | ---- | <50 | <50 | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | ---- | <10 | <10 | <10 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 107 | 100 | ---- | 112 | 111 | |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 83.7 | 85.2 | ---- | 78.4 | 78.8 | |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 76.5 | 78.6 | ---- | 74.8 | 75.2 | |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 90.3 | 92.5 | ---- | 87.2 | 89.5 | |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 106 | 101 | ---- | 112 | 108 | |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 83.2 | 78.2 | ---- | 90.7 | 83.7 | |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT_MW15_090119_
0.2 | CPT_MW15_090119_
0.5 | CPT_MW15_090119_
1.0 | CPT_MW16_090119_
0.2 | CPT_MW16_090119_
0.5 |
|---|------------|-------|------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Client sampling date / time | | | | 09-Jan-2019 11:15 | 09-Jan-2019 11:20 | 09-Jan-2019 11:25 | 09-Jan-2019 13:30 | 09-Jan-2019 13:35 |
| Compound | CAS Number | LOR | Unit | EM1900178-012 | EM1900178-013 | EM1900178-014 | EM1900178-018 | EM1900178-019 |
| | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 87.8 | 47.0 | ---- | 97.6 | 74.4 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 98.6 | 92.7 | ---- | 108 | 98.7 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 91.7 | 84.8 | ---- | 96.2 | 89.2 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 107 | 102 | ---- | 118 | 108 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 103 | 97.6 | ---- | 114 | 104 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 101 | 94.2 | ---- | 111 | 102 |



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|---|------------|-------|-------------|------------------|---------------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW16_090119_2.0 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | | 09-Jan-2019 13:45 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900178-021 | ----- | ----- | ----- | ----- |
| | | | | Result | | ---- | ---- | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | 6.0 | ---- | ---- | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | 6 | ---- | ---- | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | <0.005 | ---- | ---- | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | <10 | ---- | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | 1.5 | ---- | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | <0.02 | ---- | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | <10 | ---- | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | <1 | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | <0.02 | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | <10 | ---- | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | <1 | ---- | ---- | ---- | ---- |



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|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC308_090119 | CPT_QC408_090119 | CPT_QC513_090119 | CPT_QC514_090119 | ---- |
| Client sampling date / time | | | | | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900178-008 | EM1900178-009 | EM1900178-010 | EM1900178-011 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 7.61 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | <0.005 | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | <0.004 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC308_090119 | CPT_QC408_090119 | CPT_QC513_090119 | CPT_QC514_090119 | ---- |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900178-008 | EM1900178-009 | EM1900178-010 | EM1900178-011 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |



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|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC308_090119 | CPT_QC408_090119 | CPT_QC513_090119 | CPT_QC514_090119 | ---- |
| Client sampling date / time | | | | | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900178-008 | EM1900178-009 | EM1900178-010 | EM1900178-011 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | <20 | <20 | <20 | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC308_090119 | CPT_QC408_090119 | CPT_QC513_090119 | CPT_QC514_090119 | ---- |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900178-008 | EM1900178-009 | EM1900178-010 | EM1900178-011 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 74.2 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 90.5 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 89.4 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 90.7 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 24.0 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 58.0 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 53.4 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 72.8 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 73.6 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 77.2 | ---- | ---- | ---- | ---- |



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| | | | | | | | | | |
|---|------------|------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC308_090119 | CPT_QC408_090119 | CPT_QC513_090119 | CPT_QC514_090119 | ---- |
| Client sampling date / time | | | | | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | 09-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900178-008 | EM1900178-009 | EM1900178-010 | EM1900178-011 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.25 | % | | 43.8 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.25 | % | | 101 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.25 | % | | 81.7 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.25 | % | | 103 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.25 | % | | 118 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.25 | % | | 116 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.25 | % | | 121 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.25 | % | | 101 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 103 | 107 | 115 | 110 | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 95.2 | 96.9 | 100 | 95.6 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 103 | 108 | 110 | 109 | ---- |



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| | | | |
|---|-------------------|------------------|------|
| Sub-Matrix: SOIL | | □□□□ □ □□□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

| | | | |
|---|-------------------|------------------|------|
| Sub-Matrix: WATER | | □□□□ □ □□□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 13 | 90 |
| 2-Chlorophenol-D4 | 93951-73-6 | 42 | 117 |
| 2,4,6-Tribromophenol | 118-79-6 | 52 | 140 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 49 | 136 |

| Sub-Matrix: WATER | | ☐☐☐☐ ☐ ☐☐☐ ☐☐ s ☐ | |
|--|------------|-------------------|-----|
| Compound | CAS Number | ☐☐% | ☐☐☐ |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 49 | 128 |
| 2-Fluorobiphenyl | 321-60-8 | 57 | 137 |
| Anthracene-d10 | 1719-06-8 | 67 | 137 |
| 4-Terphenyl-d14 | 1718-51-0 | 66 | 136 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900178 | Page | : 1 of 14 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 09-Jan-2019 17:05 |
| Order number | : ---- | Date Analysed | : 11-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 18-Jan-2019 15:36 |
| No. of samples received | : 23 | | |
| No. of samples analysed | : 15 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT_MW11_0 | | CPT_MW11_0 | | CPT_QC101_0 | | CPT_MW15_0 | | CPT_MW15_0 | |
|--|--------------|------|---------|--------------------|---------|---------------|---------------|---------------|---------------|---------------|--|-------------|--|-------------|--|
| | | | | Sampling date/time | | 09-Jan-2019 | | 09-Jan-2019 | | 09-Jan-2019 | | 09-Jan-2019 | | 09-Jan-2019 | |
| | | | | | | 08:40 | | 08:50 | | 15:00 | | 11:15 | | 11:20 | |
| Compound | Method | LOR | Unit | 0000 00 | 0000 00 | EM1900178-001 | EM1900178-003 | EM1900178-007 | EM1900178-012 | EM1900178-013 | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.0 | 6.3 | 5.3 | 5.6 | 6.0 | | | | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | <5 | <5 | <5 | <5 | | | | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | <1 | | | | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 | <5 | <5 | 11 | 13 | | | | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 8 | 7 | 7 | 10 | 8 | | | | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | <2 | <2 | | | | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | <2 | 6 | <2 | 15 | 16 | | | | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | <5 | | | | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | <2 | | | | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 | <5 | <5 | 11 | 7 | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | | | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | <1 | <1 | 1 | <1 | | | | | |
| EK040T: Fluoride Total | | | | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 90 | 180 | 80 | 150 | 170 | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | <1 | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT_MW11_0
90119_0.2 | CPT_MW11_0
90119_1.0 | CPT_QC101_0
90119 | CPT_MW15_0
90119_0.2 | CPT_MW15_0
90119_0.5 |
|--|--------------|------|-------|--------------------|---------------|---------------|-------------------------|-------------------------|----------------------|-------------------------|-------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 09-Jan-2019
08:40 | 09-Jan-2019
08:50 | 09-Jan-2019
15:00 | 09-Jan-2019
11:15 | 09-Jan-2019
11:20 |
| Compound | Method | LOR | Unit | | □□□□
□□□ □ | □□□□
□□□ □ | EM1900178-001 | EM1900178-003 | EM1900178-007 | EM1900178-012 | EM1900178-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | | <50 | <50 | <50 | <50 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT_MW11_0
90119_0.2 | CPT_MW11_0
90119_1.0 | CPT_QC101_0
90119 | CPT_MW15_0
90119_0.2 | CPT_MW15_0
90119_0.5 | | |
|--|--------------|------|---------|--------------------|-------|-------------------------|-------------------------|----------------------|-------------------------|-------------------------|---------------|--------------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | | | | | | | | □□ □□
□□ □ | □□□□
□□ □ |
| Compound | Method | LOR | Unit | | | EM1900178-001 | EM1900178-003 | EM1900178-007 | EM1900178-012 | EM1900178-013 | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.0 | 6.3 | 5.3 | 5.6 | 6.0 | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | <1 | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | <5 | <5 | <5 | 11 | 13 | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 8 | 7 | 7 | 10 | 8 | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | <2 | <2 | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | <2 | 6 | <2 | 15 | 16 | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | <2 | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | <5 | <5 | <5 | 11 | 7 | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | <1 | <1 | 1 | <1 | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 90 | 180 | 80 | 150 | 170 | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | <1 | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | CPT_MW11_0
90119_0.2 | CPT_MW11_0
90119_1.0 | CPT_QC101_0
90119 | CPT_MW15_0
90119_0.2 | CPT_MW15_0
90119_0.5 |
|--|--------------|------|-------|------------------|--------------|-------------------------|-------------------------|----------------------|-------------------------|-------------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 09-Jan-2019
08:40 | 09-Jan-2019
08:50 | 09-Jan-2019
15:00 | 09-Jan-2019
11:15 | 09-Jan-2019
11:20 |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1900178-001 | EM1900178-003 | EM1900178-007 | EM1900178-012 | EM1900178-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | <50 | <50 | <50 | <50 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT_MW11_0 | | CPT_MW11_0 | | CPT_QC101_0 | | CPT_MW15_0 | | CPT_MW15_0 | |
|--|--------------|------|---------|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | | Sampling date/time | | 09-Jan-2019 | | 09-Jan-2019 | | 09-Jan-2019 | | 09-Jan-2019 | | 09-Jan-2019 | |
| Compound | Method | LOR | Unit | 09-Jan-2019 | 09-Jan-2019 | 09-Jan-2019 | 09-Jan-2019 | 09-Jan-2019 | 09-Jan-2019 | 09-Jan-2019 | 09-Jan-2019 | 09-Jan-2019 | 09-Jan-2019 | 09-Jan-2019 | 09-Jan-2019 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.0 | 6.3 | 5.3 | 5.6 | 6.0 | | | | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | <5 | <5 | <5 | <5 | | | | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | <1 | | | | | |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | <5 | <5 | <5 | 11 | 13 | | | | | |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 8 | 7 | 7 | 10 | 8 | | | | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | <2 | <2 | | | | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | <2 | 6 | <2 | 15 | 16 | | | | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | <5 | | | | | |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | <2 | | | | | |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 | | | | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | 11 | 7 | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | | | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | <1 | <1 | 1 | <1 | | | | | |
| EK040T: Fluoride Total | | | | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 90 | 180 | 80 | 150 | 170 | | | | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | <1 | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT_MW11_0
90119_0.2 | CPT_MW11_0
90119_1.0 | CPT_QC101_0
90119 | CPT_MW15_0
90119_0.2 | CPT_MW15_0
90119_0.5 |
|--|--------------|------|-------|--------------------|--------------------|----------------------------|-------------------------|-------------------------|----------------------|-------------------------|-------------------------|
| | | | | Sampling date/time | □ □ □ □ □ □ | □ □ □ □ □ □ | 09-Jan-2019
08:40 | 09-Jan-2019
08:50 | 09-Jan-2019
15:00 | 09-Jan-2019
11:15 | 09-Jan-2019
11:20 |
| Compound | Method | LOR | Unit | | □ □ □ □
□ □ □ □ | □ □ □ □ □ □
□ □ □ □ □ □ | EM1900178-001 | EM1900178-003 | EM1900178-007 | EM1900178-012 | EM1900178-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 100 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 1000 | <50 | <50 | <50 | <50 | <50 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT_MW16_0
90119_0.2 | CPT_MW16_0
90119_0.5 | ---- | ---- | ---- | | |
|--|--------------|------|---------|--------------------|--------------|-------------------------|-------------------------|-------|-------|-------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | | | | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | EM1900178-018 | EM1900178-019 | ----- | ----- | ----- | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.1 | 6.1 | ---- | ---- | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 6 | <5 | ---- | ---- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | ---- | ---- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 22 | 25 | ---- | ---- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 16 | 15 | ---- | ---- | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | ---- | ---- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 22 | 19 | ---- | ---- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | ---- | ---- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | ---- | ---- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 25 | 7 | ---- | ---- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | ---- | ---- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | ---- | ---- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | 2 | ---- | ---- | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 150 | 170 | ---- | ---- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | ---- | ---- | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | ---- | ---- | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | ---- | ---- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | ---- | ---- | ---- | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT_MW16_0
90119_0.2 | CPT_MW16_0
90119_0.5 | ---- | ---- | ---- |
|--|--------------|------|-------|--------------------|----------------------------|----------------------------|-------------------------|-------------------------|-------|-------|-------|
| | | | | Sampling date/time | □ □ □ □ □ □ | □ □ □ □ □ □ | 09-Jan-2019
13:30 | 09-Jan-2019
13:35 | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | | □ □ □ □ □ □
□ □ □ □ □ □ | □ □ □ □ □ □
□ □ □ □ □ □ | EM1900178-018 | EM1900178-019 | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | | ---- | 400 | <0.5 | <0.5 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | | ---- | 4.8 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | | ---- | 4.8 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | | ---- | 50 | <0.05 | <0.05 | ---- | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | | ---- | 16 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | | ---- | 50 | <0.03 | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | | ---- | 2600 | <10 | <10 | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | | ---- | 40000 | <50 | <50 | ---- | ---- | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT_MW16_0
90119_0.2 | CPT_MW16_0
90119_0.5 | ---- | ---- | ---- |
|--|--------------|------|---------|--------------------|-------|-------------------------|-------------------------|-------|-------|-------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□ | □□□□ | 09-Jan-2019
13:30 | 09-Jan-2019
13:35 | ---- | ---- | ---- |
| | | | | □□ □ | □□□□ | EM1900178-018 | EM1900178-019 | ----- | ----- | ----- |
| | | | | □□ □ | □□ □ | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.1 | 6.1 | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | 6 | <5 | ---- | ---- | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | ---- | ---- | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 22 | 25 | ---- | ---- | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 16 | 15 | ---- | ---- | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | ---- | ---- | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 22 | 19 | ---- | ---- | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | ---- | ---- | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | ---- | ---- | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | ---- | ---- | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 25 | 7 | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | ---- | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | 2 | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 150 | 170 | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | ---- | ---- | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | ---- | ---- | ---- |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | ---- | ---- | ---- |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | CPT_MW16_0
90119_0.2 | CPT_MW16_0
90119_0.5 | ---- | ---- | ---- |
|--|--------------|------|-------|------------------|---------------|-------------------------|-------------------------|-------|-------|-------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 09-Jan-2019
13:30 | 09-Jan-2019
13:35 | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | □□□□
□□□ □ | □□□□
□□□ □ | EM1900178-018 | EM1900178-019 | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 | <0.5 | ---- | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 | <0.5 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | ---- | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | <10 | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | <50 | <50 | ---- | ---- | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT_MW16_0
90119_0.2 | CPT_MW16_0
90119_0.5 | ---- | ---- | ---- |
|--|--------------|------|---------|--------------------|--------------|---------------|---------------|-------------------------|-------------------------|-------|------|------|
| | | | | Sampling date/time | | | | 09-Jan-2019
13:30 | 09-Jan-2019
13:35 | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | EM1900178-018 | EM1900178-019 | ----- | ----- | ----- | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.1 | 6.1 | ---- | ---- | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | 6 | <5 | ---- | ---- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | ---- | ---- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 22 | 25 | ---- | ---- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 16 | 15 | ---- | ---- | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | ---- | ---- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 22 | 19 | ---- | ---- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | ---- | ---- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | ---- | ---- | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | ---- | ---- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 25 | 7 | ---- | ---- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | ---- | ---- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | ---- | ---- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | 2 | ---- | ---- | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 150 | 170 | ---- | ---- | ---- | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | ---- | ---- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | ---- | ---- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management
Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | | |
|---|--------------|------|-------|------------------|------|-------|-------------------------|-------------------------|-------|-------|-------|
| Sub-Matrix: SOIL | | | | Client sample ID | | | CPT_MW16_0
90119_0.2 | CPT_MW16_0
90119_0.5 | ---- | ---- | ---- |
| Sampling date/time | | | | | | | 09-Jan-2019
13:30 | 09-Jan-2019
13:35 | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | | | | EM1900178-018 | EM1900178-019 | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | ---- | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | <50 | ---- | ---- | ---- | ---- |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900178 | Page | : 1 of 21 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 09-Jan-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 11-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 18-Jan-2019 |
| Sampler | : SM | | |
| Site | : GIJPP Groundwater Study | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 23 | | |
| No. of samples analysed | : 15 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Senior Inorganic Chemist
Senior Inorganic Chemist
2IC Organic Chemist
Senior Inorganic Instrument Chemist

Melbourne Inorganics, Springvale, VIC
Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Organics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|---------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2137558) | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.0 | 5.0 | 0.00 | 0% - 20% |
| EM1900257-013 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.8 | 5.8 | 0.00 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2139054) | | | | | | | | | |
| EB1900860-001 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 8.6 | 8.6 | 0.00 | 0% - 20% |
| EM1900257-007 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.06 | 0.06 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 36 | 35 | 3.69 | 0% - 50% |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 4.4 | 4.4 | 0.00 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2139054) | | | | | | | | | |
| EB1900860-001 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.821 | 0.874 | 6.28 | 0% - 20% |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | 512 | 545 | 6.28 | 0% - 20% |
| EM1900257-007 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.005 | <0.005 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA033-D: Retained Acidity (QC Lot: 2139054) | | | | | | | | | |
| EM1900257-007 | Anonymous | EA033: sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | 0.04 | 0.04 | 0.00 | No Limit |
| | | EA033: HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | 0.04 | 0.04 | 0.00 | No Limit |
| | | EA033: acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2131689) | | | | | | | | | |
| EM1900170-004 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 11.2 | 12.5 | 11.4 | 0% - 50% |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|---------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2131689) - continued | | | | | | | | | |
| EM1900189-002 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 23.5 | 23.2 | 1.12 | 0% - 20% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2138941) | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 8 | 7 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900347-003 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 10 | 10 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 6 | 24.4 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 7 | 8 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 12 | 14 | 19.8 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 8 | 10 | 19.1 | No Limit |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2138940) | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900347-003 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2139519) | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900257-013 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 0.6 | 19.5 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2139534) | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900257-013 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2131411) | | | | | | | | | |
| EM1900170-002 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 110 | 160 | 34.4 | No Limit |
| EM1900178-018 | CPT_MW16_090119_0.2 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 150 | 180 | 15.8 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2137374) | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900257-014 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2131382) | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|---------------------|-------------------------------------|------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2131382) - continued | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900238-008 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2131382) | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900238-008 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2131382) | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| | | EM1900238-008 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|---------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2131382) - continued | | | | | | | | | |
| EM1900238-008 | Anonymous | EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2137372) | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1900257-014 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2137372) | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|---------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2137372) - continued | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900257-014 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2137372) | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| EM1900257-014 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|---------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2137372) - continued | | | | | | | | | |
| EM1900257-014 | Anonymous | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2137372) | | | | | | | | | |
| EM1900178-001 | CPT_MW11_090119_0.2 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900257-014 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |

Sub-Matrix: **WATER**



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2134269) - continued | | | | | | | | | |
| EM1820776-001 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.1 µg/L | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <1 µg/L | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <1 µg/L | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <1 µg/L | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 0.001 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 2 µg/L | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 114 µg/L | 0.116 | 1.72 | 0% - 20% |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900257-010 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2134271) | | | | | | | | | |
| EM1900178-008 | CPT_QC308_090119 | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2134272) | | | | | | | | | |
| EM1900269-008 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900178-008 | CPT_QC308_090119 | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2135189) | | | | | | | | | |
| EM1900178-008 | CPT_QC308_090119 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2131684) | | | | | | | | | |
| EM1900162-004 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EM1900192-004 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2133862) | | | | | | | | | |
| EM1900257-010 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900266-004 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.5 | 0.5 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2138292) | | | | | | | | | |
| EM1900178-008 | CPT_QC308_090119 | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2138292) | | | | | | | | | |
| EM1900178-008 | CPT_QC308_090119 | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2138292) - continued | | | | | | | | | |
| EM1900178-008 | CPT_QC308_090119 | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2138292) | | | | | | | | | |
| EM1900178-008 | CPT_QC308_090119 | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2138292) | | | | | | | | | |
| EM1900178-008 | CPT_QC308_090119 | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2132182) | | | | | | | | | |
| EM1900254-001 | Anonymous | EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | | 205-82-3 | | | | | | |
| | | EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Indeno(1,2,3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2132183) | | | | | | | | | |
| EM1900254-001 | Anonymous | EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2138293) | | | | | | | | | |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2138293) - continued | | | | | | | | | |
| EM1900336-009 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900178-008 | CPT_QC308_090119 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2132183) | | | | | | | | | |
| EM1900254-001 | Anonymous | EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2138293) | | | | | | | | | |
| EM1900336-009 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900178-008 | CPT_QC308_090119 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2138293) | | | | | | | | | |
| EM1900336-009 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EM1900178-008 | CPT_QC308_090119 | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-------|-------------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | LCS | Low | High |
| EA033-A: Actual Acidity (QCLot: 2139054) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 98.1 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2139054) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 95.5 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-D: Retained Acidity (QCLot: 2139054) | | | | | | | | |
| EA033: Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA033: acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033: sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.02 | 0.052 % S | 90.2 | 70 | 130 |
| EA033: HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | <0.02 | 0.027 % S | 92.7 | 70 | 130 |
| EG005T: Total Metals by ICP-AES (QCLot: 2138941) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 92.1 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 86.8 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 83.7 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 85.6 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 104 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 91.5 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 98.3 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 80.3 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 107 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 89.8 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2138940) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 89.3 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2139519) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 96.1 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2139534) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 97.8 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2131411) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 93.5 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2137374) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 108 | 63 | 118 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2131382) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 78.6 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 78.5 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 77.5 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 77.8 | 66 | 115 |
| | 106-42-3 | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 81.9 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 77.8 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2131382) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 87.0 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2131382) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 76.1 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 75.0 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 82.8 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 77.1 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 79.5 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 79.9 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 82.6 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 76.2 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 94.0 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 78.7 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 90.0 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 76.2 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 84.6 | 71 | 118 |
| EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 94.7 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 59.5 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 83.0 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 79.0 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 83.8 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 73.2 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2137372) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 99.9 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 111 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 119 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 118 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 120 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 109 | 65 | 124 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2137372) - continued | | | | | | | | |
| EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 114 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 116 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2137372) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 102 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 104 | 65 | 126 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 106 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 112 | 53 | 128 |
| EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 100 | 56 | 136 |
| EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 150 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 104 | 48 | 130 |
| EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 107 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 120 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 90.8 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2137372) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 111 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 110 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 120 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 59.7 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 119 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 124 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 125 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 110 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 130 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 120 | 70 | 130 |
| EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 127 | 72 | 134 |
| EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 126 | 72 | 135 |
| EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 127 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2137372) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 95.5 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 108 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 117 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 108 | 72 | 126 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-----------------|------|-------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2137372) - continued | | | | | | | | |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 106 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 108 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 105 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 64 | 137 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 114 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 112 | 72 | 132 |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 116 | 42 | 160 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | # 50.4 | 55 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 122 | 73 | 132 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 132 | 75 | 134 |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 119 | 73 | 133 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 110 | 67 | 133 |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 120 | 67 | 135 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2131382) | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 82.3 | 63 | 122 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2137373) | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 91.2 | 70 | 120 |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 108 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 98.8 | 77 | 117 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2131382) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 82.9 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTE
X | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2137373) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 96.7 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 107 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 83.9 | 68 | 124 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|--------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
LowHigh | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2134269) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 98.7 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 92.4 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 93.1 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.5 | 83 | 105 |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 99.4 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.2 | 82 | 106 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2134269) - continued | | | | | | | | |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 97.3 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 98.4 | 83 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 99.5 | 85 | 109 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2134271) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 96.9 | 84 | 116 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2134272) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 90.9 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2135189) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 103 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2131684) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 105 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2133862) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 103 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2132181) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 73.9 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2138292) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 97.5 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2138292) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 106 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 103 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 98.3 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 101 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 100 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 97.3 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 92.0 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 100 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 95.8 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 106 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 105 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 97.8 | 76 | 112 |
| EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 103 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 122 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2138292) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 102 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 107 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 104 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 112 | 64 | 122 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074G: Trihalomethanes (QCLot: 2138292) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 102 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2132182) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 53.8 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 58.6 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 55.7 | 53 | 117 |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 59.6 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 59.4 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 59.0 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 62.2 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 62.7 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 60.2 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 62.3 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2
205-82-3 | 1 | µg/L | <1.0 | 5 µg/L | 59.4 | 56 | 131 |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 62.2 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 59.7 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 62.5 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 62.3 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 64.2 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2132184) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 99.4 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 96.8 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 108 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 109 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 109 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 107 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 20 µg/L | 95.9 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 2 | µg/L | <2 | 40 µg/L | 89.0 | 53 | 125 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 93.6 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2132184) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 4 | µg/L | <4 | 10 µg/L | 48.4 | 18 | 51 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | 10 µg/L | 89.8 | 49 | 106 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | 20 µg/L | 79.1 | 41 | 91 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | 10 µg/L | 93.7 | 48 | 120 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | 10 µg/L | 101 | 47 | 128 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | 60 µg/L | 60.3 | 41 | 130 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | 60 µg/L | 32.3 | 19 | 49 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|---|-----------|------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2132184) - continued | | | | | | | | |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | 60 µg/L | 75.0 | 47 | 126 |
| EP075-EM: Dinoseb | 88-85-7 | 50 | µg/L | <50 | 60 µg/L | 84.0 | 49 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | 50 µg/L | 84.2 | 61 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2132184) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 10 µg/L | 110 | 57 | 126 |
| EP075-EM: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 109 | 62 | 134 |
| EP075-EM: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 105 | 58 | 133 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 101 | 60 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 100 | 59 | 132 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 96.1 | 61 | 137 |
| EP075-EM: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 10 µg/L | 99.6 | 59 | 130 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 96.4 | 59 | 135 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | 10 µg/L | 96.3 | 59 | 128 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2132183) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 61.0 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 65.9 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 64.0 | 55 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2138293) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 97.8 | 65 | 126 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2132183) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 67.4 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 64.8 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 68.6 | 53 | 136 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2138293) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 97.1 | 64 | 124 |
| EP080: BTEXN (QCLot: 2138293) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 102 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 98.5 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 102 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 100 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 102 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 93.4 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|---------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2138941) | | | | | | | |
| EM1900178-003 | CPT_MW11_090119_1.0 | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 89.8 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 93.2 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 97.2 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 96.2 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 96.9 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 95.9 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 86.2 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 94.4 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2138940) | | | | | | | |
| EM1900178-003 | CPT_MW11_090119_1.0 | EG035T: Mercury | 7439-97-6 | 5 mg/kg | # 73.9 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2139519) | | | | | | | |
| EM1900178-003 | CPT_MW11_090119_1.0 | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | 83.4 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2139534) | | | | | | | |
| EM1900178-003 | CPT_MW11_090119_1.0 | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 103 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2131411) | | | | | | | |
| EM1900170-003 | Anonymous | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 79.5 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2137374) | | | | | | | |
| EM1900178-007 | CPT_QC101_090119 | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 104 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2131382) | | | | | | | |
| EM1900178-003 | CPT_MW11_090119_1.0 | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 75.3 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 76.6 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2131382) | | | | | | | |
| EM1900178-003 | CPT_MW11_090119_1.0 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 72.3 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 70.3 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 78.1 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2137372) | | | | | | | |
| EM1900178-003 | CPT_MW11_090119_1.0 | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 93.2 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 113 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 15.9 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2137372) | | | | | | | |
| EM1900178-003 | CPT_MW11_090119_1.0 | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 101 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 33.3 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2137372) | | | | | | | |
| EM1900178-003 | CPT_MW11_090119_1.0 | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 110 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 118 | 27 | 169 |

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|---------------------|-------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2131382) | | | | | | | |
| EM1900178-003 | CPT_MW11_090119_1.0 | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 68.7 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2137373) | | | | | | | |
| EM1900178-012 | CPT_MW15_090119_0.2 | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 90.6 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 107 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 97.8 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2131382) | | | | | | | |
| EM1900178-003 | CPT_MW11_090119_1.0 | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 67.1 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2137373) | | | | | | | |
| EM1900178-012 | CPT_MW15_090119_0.2 | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 96.2 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 106 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 84.2 | 44 | 126 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|---|------------------|-----------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2134269) | | | | | | | |
| EM1820776-001 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 93.4 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 87.1 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 89.6 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 92.4 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 91.1 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 94.0 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2134272) | | | | | | | |
| EM1900257-010 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 82.4 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2135189) | | | | | | | |
| EM1900257-010 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 104 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2131684) | | | | | | | |
| EM1900178-008 | CPT_QC308_090119 | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 95.0 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2133862) | | | | | | | |
| EM1900266-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 102 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2138292) | | | | | | | |
| EM1900257-010 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 99.4 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 81.5 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2138292) | | | | | | | |
| EM1900257-010 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 94.9 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2138293) | | | | | | | |

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 Work Order : EM1900178
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2138293) - continued | | | | | | | |
| EM1900257-010 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 73.9 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2138293) | | | | | | | |
| EM1900257-010 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 72.4 | 44 | 122 |
| EP080: BTEXN (QCLot: 2138293) | | | | | | | |
| EM1900257-010 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 102 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 95.1 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1900178**

Page : 1 of 15

Client : **AECOM Australia Pty Ltd**

Laboratory : Environmental Division Melbourne

Contact : [REDACTED]

Telephone : +6138549 9645

Project : 60592634

Date Samples Received : 09-Jan-2019

Site : GIJPP Groundwater Study

Issue Date : 18-Jan-2019

Sampler : SM

No. of samples received : 23

Order number :

No. of samples analysed : 15

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|---------------------|---------|------------|--------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2137372-001 | ---- | Endrin | 72-20-8 | 50.4 % | 55-148% | Recovery less than lower control limit |
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | EM1900178--003 | CPT_MW11_090119_1.0 | Mercury | 7439-97-6 | 73.9 % | 76-116% | Recovery less than lower data quality objective |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| Container / Client Sample ID(s) | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
CPT_QC308_090119 | ---- | ---- | ---- | 14-Jan-2019 | 09-Jan-2019 | 5 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| Polychlorinated Biphenyls (PCB) | 0 | 2 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 3 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 6 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 2 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 3 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 6 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---------------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|----------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001) | | 09-Jan-2019 | 16-Jan-2019 | 16-Jan-2019 | ✓ | 16-Jan-2019 | 16-Jan-2019 | ✓ |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | | | | | | | |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 09-Jan-2019 | 17-Jan-2019 | 09-Jan-2020 | ✓ | 17-Jan-2019 | 17-Apr-2019 | ✓ |
| CPT_MW11_090119_0.5, | CPT_MW11_090119_2.0, | | | | | | | |
| CPT_MW15_090119_0.2, | CPT_MW15_090119_1.0, | | | | | | | |
| CPT_MW16_090119_0.2, | CPT_MW16_090119_2.0 | | | | | | | |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 09-Jan-2019 | 17-Jan-2019 | 09-Jan-2020 | ✓ | 17-Jan-2019 | 17-Apr-2019 | ✓ |
| CPT_MW11_090119_0.5, | CPT_MW11_090119_2.0, | | | | | | | |
| CPT_MW15_090119_0.2, | CPT_MW15_090119_1.0, | | | | | | | |
| CPT_MW16_090119_0.2, | CPT_MW16_090119_2.0 | | | | | | | |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 09-Jan-2019 | 17-Jan-2019 | 09-Jan-2020 | ✓ | 17-Jan-2019 | 17-Apr-2019 | ✓ |
| CPT_MW11_090119_0.5, | CPT_MW11_090119_2.0, | | | | | | | |
| CPT_MW15_090119_0.2, | CPT_MW15_090119_1.0, | | | | | | | |
| CPT_MW16_090119_0.2, | CPT_MW16_090119_2.0 | | | | | | | |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 09-Jan-2019 | 17-Jan-2019 | 09-Jan-2020 | ✓ | 17-Jan-2019 | 17-Apr-2019 | ✓ |
| CPT_MW11_090119_0.5, | CPT_MW11_090119_2.0, | | | | | | | |
| CPT_MW15_090119_0.2, | CPT_MW15_090119_1.0, | | | | | | | |
| CPT_MW16_090119_0.2, | CPT_MW16_090119_2.0 | | | | | | | |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 09-Jan-2019 | 17-Jan-2019 | 09-Jan-2020 | ✓ | 17-Jan-2019 | 17-Apr-2019 | ✓ |
| CPT_MW11_090119_0.5, | CPT_MW11_090119_2.0, | | | | | | | |
| CPT_MW15_090119_0.2, | CPT_MW15_090119_1.0, | | | | | | | |
| CPT_MW16_090119_0.2, | CPT_MW16_090119_2.0 | | | | | | | |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055) | | 09-Jan-2019 | ---- | ---- | ---- | 11-Jan-2019 | 23-Jan-2019 | ✓ |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | | | | | | | |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|----------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T) | | | | | | | | |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | 09-Jan-2019 | 17-Jan-2019 | 08-Jul-2019 | ✔ | 17-Jan-2019 | 08-Jul-2019 | ✔ |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T) | | | | | | | | |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | 09-Jan-2019 | 17-Jan-2019 | 06-Feb-2019 | ✔ | 18-Jan-2019 | 06-Feb-2019 | ✔ |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G) | | | | | | | | |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | 09-Jan-2019 | 17-Jan-2019 | 06-Feb-2019 | ✔ | 17-Jan-2019 | 24-Jan-2019 | ✔ |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF) | | | | | | | | |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✔ | 17-Jan-2019 | 30-Jan-2019 | ✔ |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T) | | | | | | | | |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | 09-Jan-2019 | 11-Jan-2019 | 06-Feb-2019 | ✔ | 15-Jan-2019 | 06-Feb-2019 | ✔ |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM) | | | | | | | | |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | | | | | | | |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | 09-Jan-2019 | 11-Jan-2019 | 16-Jan-2019 | ✔ | 11-Jan-2019 | 16-Jan-2019 | ✔ |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|----------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 09-Jan-2019 | 11-Jan-2019 | 16-Jan-2019 | ✔ | 11-Jan-2019 | 16-Jan-2019 | ✔ |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | | | | | | | |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 09-Jan-2019 | 11-Jan-2019 | 16-Jan-2019 | ✔ | 11-Jan-2019 | 16-Jan-2019 | ✔ |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | | | | | | | |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | | | | | | | |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | | | | | | | |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | | | | | | | |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | | | | | | | |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|----------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 09-Jan-2019 | 11-Jan-2019 | 16-Jan-2019 | ✔ | 11-Jan-2019 | 16-Jan-2019 | ✔ |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | | | | | | | |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM) | | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | | | | | | | |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 09-Jan-2019 | 11-Jan-2019 | 16-Jan-2019 | ✔ | 11-Jan-2019 | 16-Jan-2019 | ✔ |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | | | | | | | |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM) | | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |
| CPT_MW11_090119_0.2, | CPT_MW11_090119_1.0, | | | | | | | |
| CPT_QC101_090119, | CPT_MW15_090119_0.2, | | | | | | | |
| CPT_MW15_090119_0.5, | CPT_MW16_090119_0.2, | | | | | | | |
| CPT_MW16_090119_0.5 | | | | | | | | |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
CPT_QC308_090119 | 09-Jan-2019 | ---- | ---- | ---- | 14-Jan-2019 | 09-Jan-2019 | ✖ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F)
CPT_QC308_090119 | 09-Jan-2019 | ---- | ---- | ---- | 14-Jan-2019 | 08-Jul-2019 | ✔ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
CPT_QC308_090119 | 09-Jan-2019 | ---- | ---- | ---- | 17-Jan-2019 | 06-Feb-2019 | ✔ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Clear Plastic Bottle - NaOH Filtered (EG050F)
CPT_QC308_090119 | 09-Jan-2019 | ---- | ---- | ---- | 14-Jan-2019 | 06-Feb-2019 | ✔ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| White Plastic Bottle-NaOH (EK026SF)
CPT_QC308_090119 | 09-Jan-2019 | ---- | ---- | ---- | 11-Jan-2019 | 23-Jan-2019 | ✔ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---------------------------------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EK040P: Fluoride by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
CPT_QC308_090119 | 09-Jan-2019 | ---- | ---- | ---- | 14-Jan-2019 | 06-Feb-2019 | ✓ | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
CPT_QC308_090119 | 09-Jan-2019 | 15-Jan-2019 | 16-Jan-2019 | ✓ | 16-Jan-2019 | 24-Feb-2019 | ✓ | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC308_090119 | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✓ | 16-Jan-2019 | 23-Jan-2019 | ✓ | |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC308_090119 | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✓ | 16-Jan-2019 | 23-Jan-2019 | ✓ | |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC308_090119 | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✓ | 16-Jan-2019 | 23-Jan-2019 | ✓ | |
| EP074G: Trihalomethanes | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC308_090119 | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✓ | 16-Jan-2019 | 23-Jan-2019 | ✓ | |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
CPT_QC308_090119 | 09-Jan-2019 | 15-Jan-2019 | 16-Jan-2019 | ✓ | 16-Jan-2019 | 24-Feb-2019 | ✓ | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC308_090119 | 09-Jan-2019 | 11-Jan-2019 | 16-Jan-2019 | ✓ | 16-Jan-2019 | 20-Feb-2019 | ✓ | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC308_090119 | 09-Jan-2019 | 11-Jan-2019 | 16-Jan-2019 | ✓ | 16-Jan-2019 | 20-Feb-2019 | ✓ | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC308_090119 | 09-Jan-2019 | 11-Jan-2019 | 16-Jan-2019 | ✓ | 16-Jan-2019 | 20-Feb-2019 | ✓ | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC308_090119 | 09-Jan-2019 | 15-Jan-2019 | 16-Jan-2019 | ✓ | 16-Jan-2019 | 24-Feb-2019 | ✓ | |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC308_090119,
CPT_QC513_090119, | CPT_QC408_090119,
CPT_QC514_090119 | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✓ | 16-Jan-2019 | 23-Jan-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC308_090119 | 09-Jan-2019 | 15-Jan-2019 | 16-Jan-2019 | ✓ | 16-Jan-2019 | 24-Feb-2019 | ✓ | |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC308_090119,
CPT_QC513_090119, | CPT_QC408_090119,
CPT_QC514_090119 | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✓ | 16-Jan-2019 | 23-Jan-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---------------------------------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP080: BTEXN | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC308_090119,
CPT_QC513_090119, | CPT_QC408_090119,
CPT_QC514_090119 | 09-Jan-2019 | 16-Jan-2019 | 23-Jan-2019 | ✔ | 16-Jan-2019 | 23-Jan-2019 | ✔ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Laboratory Control Samples (LCS) | | | | | | | |
|---|------------|---|----|-------|------|---|--------------------------------|
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

Method Blanks (MB)



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 6 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 2 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 3 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 6 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|--|
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazine. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |



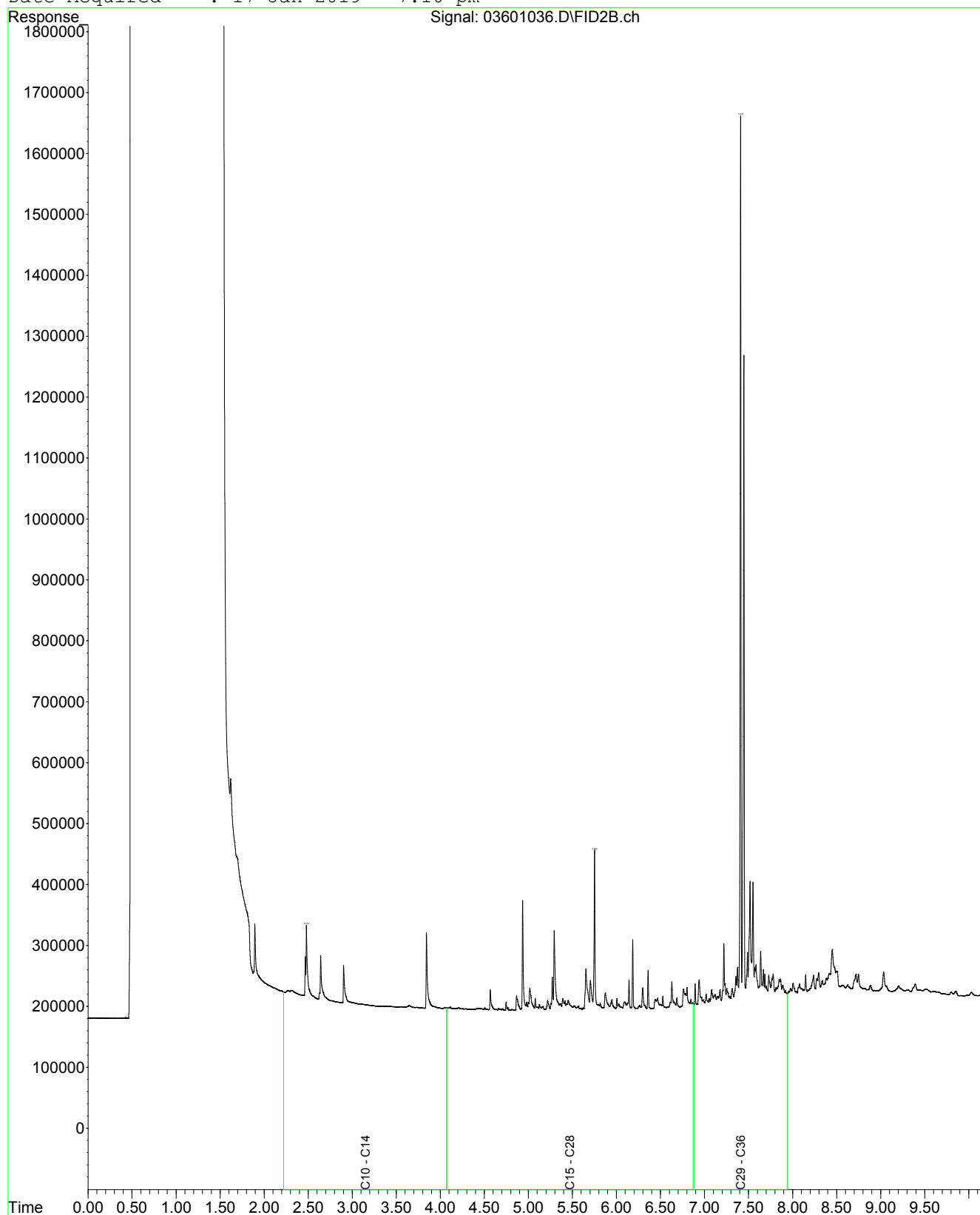
| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |

| Preparation Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|---|
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |



| Preparation Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|--|
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

Fraction Scheme : Standard
Data File : 03601036.D
Laboratory Number: EM1900178-012
Sample ID : CPT_MW15_090119_0.2
Date Acquired : 17 Jan 2019 7:10 pm



ANZ
FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|-----------------------|--|-------------------|--|-------------|---|--|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: S. Mcdonnell | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: GLUPP Groundwater Study | | MOBILE: 0800 000 000 | | ALS | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO. EW096118 | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY: | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORS etc. | |
| COOLER SEAL (circle appropriate):
Intact: Yes No N/A | | | | | | | |
| SAMPLE TEMPERATURE:
CHILLED: Yes No | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | CPT000-MW02-10019-0.2 | S | 10.01.19 | 0815 | | 15 | |
| 2 | CPT000-MW02-10019-0.5 | S | | 0820 | | | |
| 3 | CPT000-MW02-10019-1.0 | S | | 0825 | | | |
| 4 | CPT000-MW02-10019-1.5 | S | | 0830 | | | |
| 5 | CPT000-MW02-10019-2.0 | S | | 0835 | | | |
| 6 | CPT000-MW02-10019-2.5 | S | | 0840 | | | |
| 7 | CPT000-MW02-10019-3.0 | S | | 0845 | | | |
| 8 | CPT000-MW02-10019-3.5 | S | | 0850 | | | |
| 9 | CPT000-MW02-10019-4.0 | S | | 0855 | | | |
| 10 | CPT-OC309-10019 | W | | | | 63 | |
| 11 | CPT-OC409-10019 | W | | | | 20 | |
| 12 | CPT-OC515 | W | | | | 10 | |
| 13 | CPT-OC102-10019 | S | | | | 15 | |
| 14 | CPT-OC202-10019 | S | | | | 1518 | |
| 15 | CPT000-MW03-10019-0.2 | S | | 1010 | | | |
| 16 | CPT000-MW03-10019-0.5 | S | | 1015 | | | |
| 17 | CPT000-MW03-10019-1.0 | S | | 1020 | | | |
| 18 | CPT000-MW03-10019-1.5 | S | | 1025 | | | |
| 19 | CPT000-MW03-10019-2.0 | S | | 1030 | | | |
| RELINQUISHED BY: | | RECEIVED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
| Name: Sebastian Mullen | Date: 10.01.19 | Name: NKI | Date: 10/1 | Name: | Date: | Cont' Note No: | |
| Of: AECOM | Time: 1630 | Of: AS | Time: 1640 | Of: | Time: | Transport Co: | |
| Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide/Cd Preserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = Sulfuric Preserved Plastic; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulfate Soils; B = Unpreserved Bag. | | | | | | | |

Environmental Division
Melbourne
Work Order Reference
EM1900257



Telephone : + 61-3-8549 9800

Forwarded to
Secondary Lab

Analysis Date 11/11

COC Page of

Please freeze bags for Acid sulfate analysis

ANZ

Please freeze bags for Acid sulfate analysis-

[REDACTED]

From: [REDACTED]@aecom.com>
Sent: Friday, 11 January 2019 8:34 AM
To: [REDACTED]
Cc: Melbourne Enviro Services
Subject: RE: ON HOLD - EM1900257 - AECOM 60592634 GIJPP

Hi [REDACTED]

Please analyse:

- 3 1. CPT000_MW02_100119_1.0= IWRG621
- 6 2. CPT000_MW02_100119_2.0 = IWRG621
- 14 3. CPT000_MW03_100119_0.2 = IWRG621
- 15 4. CPT000_MW03_100119_0.5 = IWRG621
- 25 5. CPT_MW08_100119_0.5 = IWRG621
- 27 6. CPT_MW08_100119_2.0 = IWRG621
- 2 7. CPT000_MW02_100119_0.5 = Chromium Suite (EA033)
- 7 8. CPT000_MW02_100119_3.0 = Chromium Suite (EA033)
- 16 9. CPT000_MW03_100119_1.0 = Chromium Suite (EA033)
- 18 10. CPT000_MW03_100119_2.0 = Chromium Suite (EA033)
- 26 11. CPT_MW08_100119_1.0 = Chromium Suite (EA033)
- 27 12. CPT_MW08_100119_2.0 = Chromium Suite (EA033)
- 13 13. QC102_100119 = IWRG621
- 14. QC202_100119 = IWRG621 (Triplicate, please forward to Eurofins)
- 10 15. QC309_100119 = IWRG621 water equivalent
- 11 16. QC409_100119 = TPH(C6-C9)/BTEXN
- 12 17. QC515_100119 = TPH(C6-C9)/BTEXN
- 23 18. QC516_100119 = TPH(C6-C9)/BTEXN

At standard TAT. Thanks.

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

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From: [REDACTED]@alsglobal.com]
Sent: Friday, 11 January 2019 8:01 AM
To: [REDACTED]
Cc: Melbourne Enviro Services
Subject: FW: ON HOLD - EM1900257 - AECOM 60592634 GIJPP

Hi [REDACTED]

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900257

| | |
|--|---|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : GIJPP Groundwater Study</p> <p>Sampler : SM</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 3</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|--|---|

Dates

| | |
|---|---|
| Date Samples Received : 10-Jan-2019 16:40 | Issue Date : 11-Jan-2019 |
| Client Requested Due : 18-Jan-2019 | Scheduled Reporting Date : 18-Jan-2019 |
| Date | |

Delivery Details

| | |
|----------------------------|--|
| Mode of Delivery : Carrier | Security Seal : Intact. |
| No. of coolers/boxes : 2 | Temperature : 6.9°C - Ice present |
| Receipt Detail : | No. of samples received / analysed : 29 / 16 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM1900257-002 : 10-Jan-2019 08:20 : CPT000_MW02_100119_0.5
EM1900257-003 : 10-Jan-2019 08:25 : CPT000_MW02_100119_1.0
EM1900257-005 : 10-Jan-2019 08:35 : CPT000_MW02_100119_2.0
EM1900257-007 : 10-Jan-2019 08:45 : CPT000_MW02_100119_3.0
EM1900257-014 : 10-Jan-2019 10:10 : CPT000_MW03_100119_0.2
EM1900257-015 : 10-Jan-2019 10:15 : CPT000_MW03_100119_0.5
EM1900257-016 : 10-Jan-2019 10:20 : CPT000_MW03_100119_1.0
EM1900257-018 : 10-Jan-2019 10:30 : CPT000_MW03_100119_2.0

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: SOIL

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IRG 621 | SOIL - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|-----------------------|---|--|--------------------------------------|------------------------|-----------------------------------|
| EM1900257-001 | 10-Jan-2019 08:15 | CPT000_MW02_100119_0. | ✓ | | | | |
| EM1900257-002 | 10-Jan-2019 08:20 | CPT000_MW02_100119_0. | | ✓ | | | |
| EM1900257-003 | 10-Jan-2019 08:25 | CPT000_MW02_100119_1. | | | ✓ | ✓ | |
| EM1900257-004 | 10-Jan-2019 08:30 | CPT000_MW02_100119_1. | ✓ | | | | |
| EM1900257-005 | 10-Jan-2019 08:35 | CPT000_MW02_100119_2. | | | ✓ | ✓ | |
| EM1900257-006 | 10-Jan-2019 08:40 | CPT000_MW02_100119_2. | ✓ | | | | |
| EM1900257-007 | 10-Jan-2019 08:45 | CPT000_MW02_100119_3. | | ✓ | | | |
| EM1900257-008 | 10-Jan-2019 08:50 | CPT000_MW02_100119_3. | ✓ | | | | |
| EM1900257-009 | 10-Jan-2019 08:55 | CPT000_MW02_100119_4. | ✓ | | | | |
| EM1900257-013 | 10-Jan-2019 00:00 | CPT_QC102_100119 | | | ✓ | ✓ | |
| EM1900257-014 | 10-Jan-2019 10:10 | CPT000_MW03_100119_0. | | | ✓ | ✓ | |
| EM1900257-015 | 10-Jan-2019 10:15 | CPT000_MW03_100119_0. | | | ✓ | ✓ | |
| EM1900257-016 | 10-Jan-2019 10:20 | CPT000_MW03_100119_1. | | ✓ | | | |
| EM1900257-017 | 10-Jan-2019 10:25 | CPT000_MW03_100119_1. | ✓ | | | | |
| EM1900257-018 | 10-Jan-2019 10:30 | CPT000_MW03_100119_2. | | ✓ | | | |
| EM1900257-019 | 10-Jan-2019 10:35 | CPT000_MW03_100119_2. | ✓ | | | | |
| EM1900257-020 | 10-Jan-2019 10:40 | CPT000_MW03_100119_3. | ✓ | | | | |
| EM1900257-021 | 10-Jan-2019 10:45 | CPT000_MW03_100119_3. | ✓ | | | | |
| EM1900257-022 | 10-Jan-2019 10:50 | CPT000_MW03_100119_4. | ✓ | | | | |
| EM1900257-023 | 10-Jan-2019 00:00 | CPT_QC516_100119 | | | | | ✓ |
| EM1900257-024 | 10-Jan-2019 13:40 | CPT_MW08_100119_0.2 | ✓ | | | | |
| EM1900257-025 | 10-Jan-2019 13:45 | CPT_MW08_100119_0.5 | | | ✓ | ✓ | |
| EM1900257-026 | 10-Jan-2019 13:50 | CPT_MW08_100119_1.0 | | ✓ | | | |
| EM1900257-027 | 10-Jan-2019 13:55 | CPT_MW08_100119_2.0 | | ✓ | ✓ | ✓ | |
| EM1900257-028 | 10-Jan-2019 14:00 | CPT_MW08_100119_3.0 | ✓ | | | | |
| EM1900257-029 | 10-Jan-2019 14:05 | CPT_MW08_100119_4.0 | ✓ | | | | |

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER V/C EP | WATER TRH/C |
|----------------------|-----------------------------|------------------|--------------|-------------|
| EM1900257-010 | 10-Jan-2019 00:00 | CPT_QC309_100119 | ✓ | |
| EM1900257-011 | 10-Jan-2019 00:00 | CPT_QC409_100119 | | ✓ |
| EM1900257-012 | 10-Jan-2019 00:00 | CPT_QC515 | | ✓ |

| Method | Client Sample ID(s) | Container | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|----------------------------|--------------------------------|-----------|--------------------|------------------|------------------|-------------|-----------------------|------------|
| | | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | | |
| CPT_QC309_100119 | Clear Plastic Bottle - Natural | ---- | 10-Jan-2019 | 10-Jan-2019 | ✓ | 11-Jan-2019 | ✗ | |

[illegible]

CERTIFICATE OF ANALYSIS

Work Order : **EM1900257**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : SM
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 29
No. of samples analysed : 16

Page : 1 of 27
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 10-Jan-2019 16:40
Date Analysis Commenced : 11-Jan-2019
Issue Date : 18-Jan-2019 18:02



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|-------------------------------------|---|
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | 2IC Organic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | 2IC Organic Chemist | Melbourne Organics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- EG048G: EM1900257 #3, Positive Hexavalent chromium results was confirmed by re-digestion and re-analysis.
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- EG035T: EM1900257 #5 Poor matrix spike recovery for total mercury due to sample matrix.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



□ □ □ □ □ □ □ □ □ □ □ □

| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_MW02_1001
19_0.5 | CPT000_MW02_1001
19_1.0 | CPT000_MW02_1001
19_2.0 | CPT000_MW02_1001
19_3.0 | CPT_QC102_100119 |
|--|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------|
| Client sampling date / time | | | | | 10-Jan-2019 08:20 | 10-Jan-2019 08:25 | 10-Jan-2019 08:35 | 10-Jan-2019 08:45 | 10-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900257-002 | EM1900257-003 | EM1900257-005 | EM1900257-007 | EM1900257-013 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | ---- | 5.7 | 5.5 | ---- | ---- | 5.8 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.1 | ---- | ---- | 4.4 | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 24 | ---- | ---- | 36 | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.04 | ---- | ---- | 0.06 | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.006 | ---- | ---- | 0.005 | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | <10 | ---- | ---- |
| EA033-D: Retained Acidity | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | ---- | ---- | ---- | 0.04 | ---- | ---- |
| HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | ---- | ---- | ---- | 0.04 | ---- | ---- |
| Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | ---- | ---- | ---- | <0.02 | ---- | ---- |
| acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | ---- | ---- | ---- | <10 | ---- | ---- |
| sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | ---- | ---- | ---- | <0.02 | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | ---- | ---- | 1.5 | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.04 | ---- | ---- | 0.06 | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 27 | ---- | ---- | 41 | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | 2 | ---- | ---- | 3 | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.04 | ---- | ---- | 0.06 | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 27 | ---- | ---- | 41 | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 2 | ---- | ---- | 3 | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | ---- | 21.1 | 17.5 | ---- | ---- | 22.9 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | ---- | 7 | 5 | ---- | ---- | 6 |
| Cadmium | 7440-43-9 | 1 | mg/kg | ---- | <1 | <1 | ---- | ---- | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | ---- | <5 | <5 | ---- | ---- | <5 |
| Lead | 7439-92-1 | 5 | mg/kg | ---- | 11 | 14 | ---- | ---- | 9 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | ---- | <2 | <2 | ---- | ---- | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | ---- | 9 | 4 | ---- | ---- | 10 |
| Selenium | 7782-49-2 | 5 | mg/kg | ---- | <5 | <5 | ---- | ---- | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | ---- | <2 | <2 | ---- | ---- | <2 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_MW02_1001
19_0.5 | CPT000_MW02_1001
19_1.0 | CPT000_MW02_1001
19_2.0 | CPT000_MW02_1001
19_3.0 | CPT_QC102_100119 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------|
| Client sampling date / time | | | | | 10-Jan-2019 08:20 | 10-Jan-2019 08:25 | 10-Jan-2019 08:35 | 10-Jan-2019 08:45 | 10-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900257-002 | EM1900257-003 | EM1900257-005 | EM1900257-007 | EM1900257-013 |
| | | | | Result | Result | Result | Result | Result | Result |
| EG005T: Total Metals by ICP-AES - Continued | | | | | | | | | |
| Tin | 7440-31-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | ---- | <0.1 | <0.1 | <0.1 | ---- | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | ---- | 1.0 | <0.5 | <0.5 | ---- | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | ---- | 230 | 190 | 190 | ---- | 250 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | ---- | <0.1 | <0.1 | <0.1 | ---- | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | ---- | <0.4 | <0.4 | <0.4 | ---- | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |



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(Matrix: SOIL) | | | | Client sample ID | CPT000_MW02_1001
19_0.5 | CPT000_MW02_1001
19_1.0 | CPT000_MW02_1001
19_2.0 | CPT000_MW02_1001
19_3.0 | CPT_QC102_100119 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------|
| Client sampling date / time | | | | | 10-Jan-2019 08:20 | 10-Jan-2019 08:25 | 10-Jan-2019 08:35 | 10-Jan-2019 08:45 | 10-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900257-002 | EM1900257-003 | EM1900257-005 | EM1900257-007 | EM1900257-013 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | ---- | <0.04 | <0.04 | <0.04 | ---- | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_MW02_1001
19_0.5 | CPT000_MW02_1001
19_1.0 | CPT000_MW02_1001
19_2.0 | CPT000_MW02_1001
19_3.0 | CPT_QC102_100119 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------|
| Client sampling date / time | | | | | 10-Jan-2019 08:20 | 10-Jan-2019 08:25 | 10-Jan-2019 08:35 | 10-Jan-2019 08:45 | 10-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900257-002 | EM1900257-003 | EM1900257-005 | EM1900257-007 | EM1900257-013 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds (Non-halogenated) - Continued | | | | | | | | | |
| Dinoseb | 88-85-7 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | ---- | 0.6 | 0.6 | 0.6 | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | ---- | 1.2 | 1.2 | 1.2 | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |

Client sample ID

| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_MW02_1001
19_0.5 | CPT000_MW02_1001
19_1.0 | CPT000_MW02_1001
19_2.0 | CPT000_MW02_1001
19_3.0 | CPT_QC102_100119 |
|---|----------------------|------|-------|-------------------|----------------------------|----------------------------|----------------------------|----------------------------|------------------|
| Client sampling date / time | | | | 10-Jan-2019 08:20 | 10-Jan-2019 08:25 | 10-Jan-2019 08:35 | 10-Jan-2019 08:45 | 10-Jan-2019 00:00 | |
| Compound | CAS Number | LOR | Unit | EM1900257-002 | EM1900257-003 | EM1900257-005 | EM1900257-007 | EM1900257-013 | |
| | | | | Result | Result | Result | Result | Result | |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 | |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 | |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | ---- | <0.05 | |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 | |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 | |
| Endrin | 72-20-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 | |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 | |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | ---- | <0.05 | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 | |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | ---- | <0.05 | |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 | |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 | |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 | |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | ---- | <0.05 | |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 | |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | ---- | <10 | <10 | ---- | <10 | |
| C10 - C14 Fraction | ---- | 50 | mg/kg | ---- | <50 | <50 | ---- | <50 | |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | ---- | <10 | <10 | ---- | <10 | |
| C15 - C28 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | ---- | <100 | |
| C29 - C36 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | ---- | <100 | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | ---- | <50 | <50 | ---- | <50 | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | ---- | <50 | <50 | ---- | <50 | |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | ---- | <100 | |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | ---- | <100 | |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | ---- | <50 | <50 | ---- | <50 | |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | ---- | <50 | <50 | ---- | <50 | |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | ---- | <10 | <10 | ---- | <10 | |
| EP066S: PCB Surrogate | | | | | | | | | |



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|--|------------|-------|------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_MW02_1001
19_0.5 | CPT000_MW02_1001
19_1.0 | CPT000_MW02_1001
19_2.0 | CPT000_MW02_1001
19_3.0 | CPT_QC102_100119 |
| Client sampling date / time | | | | | 10-Jan-2019 08:20 | 10-Jan-2019 08:25 | 10-Jan-2019 08:35 | 10-Jan-2019 08:45 | 10-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900257-002 | EM1900257-003 | EM1900257-005 | EM1900257-007 | EM1900257-013 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP066S: PCB Surrogate - Continued | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | ---- | 115 | 115 | ---- | ---- | 113 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | ---- | 72.6 | 82.0 | ---- | ---- | 77.0 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | ---- | 62.8 | 67.3 | ---- | ---- | 66.6 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | ---- | 79.6 | 89.2 | ---- | ---- | 82.2 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | ---- | 98.1 | 105 | ---- | ---- | 94.3 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | ---- | 86.8 | 97.2 | ---- | ---- | 93.9 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | ---- | 83.3 | 95.8 | ---- | ---- | 89.5 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | ---- | 91.8 | 97.6 | ---- | ---- | 93.4 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | ---- | 107 | 108 | ---- | ---- | 108 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | ---- | 99.5 | 102 | ---- | ---- | 97.9 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | ---- | 103 | 111 | ---- | ---- | 110 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | ---- | 60.1 | 96.8 | ---- | ---- | 94.7 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_MW03_1001
19_0.2 | CPT000_MW03_1001
19_0.5 | CPT000_MW03_1001
19_1.0 | CPT000_MW03_1001
19_2.0 | CPT_MW08_100119_
0.5 |
|---|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------------|
| Client sampling date / time | | | | | 10-Jan-2019 10:10 | 10-Jan-2019 10:15 | 10-Jan-2019 10:20 | 10-Jan-2019 10:30 | 10-Jan-2019 13:45 |
| Compound | CAS Number | LOR | Unit | | EM1900257-014 | EM1900257-015 | EM1900257-016 | EM1900257-018 | EM1900257-025 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 6.4 | 6.6 | ---- | ---- | 3.6 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | ---- | 4.9 | 5.4 | ---- |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | ---- | 24 | 10 | ---- |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | ---- | 0.04 | <0.02 | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | ---- | 0.007 | 0.006 | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | ---- | <10 | <10 | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | ---- | 1.5 | 1.5 | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | ---- | 0.04 | 0.02 | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | ---- | 28 | 13 | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | ---- | 2 | <1 | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | ---- | 0.04 | 0.02 | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | ---- | 28 | 13 | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | ---- | 2 | <1 | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 15.0 | 17.0 | ---- | ---- | 4.6 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | <5 | <5 | ---- | ---- | <5 |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | <1 | ---- | ---- | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | | 7 | <5 | ---- | ---- | <5 |
| Lead | 7439-92-1 | 5 | mg/kg | | 19 | 24 | ---- | ---- | <5 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | <2 | <2 | ---- | ---- | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | | 7 | 3 | ---- | ---- | <2 |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | <5 | ---- | ---- | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | <2 | ---- | ---- | <2 |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | <5 | ---- | ---- | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | | 36 | 9 | ---- | ---- | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | ---- | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | <0.5 |



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(Matrix: SOIL) | | | | Client sample ID | CPT000_MW03_1001
19_0.2 | CPT000_MW03_1001
19_0.5 | CPT000_MW03_1001
19_1.0 | CPT000_MW03_1001
19_2.0 | CPT_MW08_100119_
0.5 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------------|
| Client sampling date / time | | | | | 10-Jan-2019 10:10 | 10-Jan-2019 10:15 | 10-Jan-2019 10:20 | 10-Jan-2019 10:30 | 10-Jan-2019 13:45 |
| Compound | CAS Number | LOR | Unit | | EM1900257-014 | EM1900257-015 | EM1900257-016 | EM1900257-018 | EM1900257-025 |
| | | | | Result | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | <1 | <1 | ---- | ---- | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 80 | 50 | ---- | ---- | <40 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | ---- | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | <1 | ---- | ---- | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | <0.4 | ---- | ---- | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | <0.04 | ---- | ---- | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | <0.02 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_MW03_1001
19_0.2 | CPT000_MW03_1001
19_0.5 | CPT000_MW03_1001
19_1.0 | CPT000_MW03_1001
19_2.0 | CPT_MW08_100119_
0.5 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------------|
| Client sampling date / time | | | | | 10-Jan-2019 10:10 | 10-Jan-2019 10:15 | 10-Jan-2019 10:20 | 10-Jan-2019 10:30 | 10-Jan-2019 13:45 |
| Compound | CAS Number | LOR | Unit | | EM1900257-014 | EM1900257-015 | EM1900257-016 | EM1900257-018 | EM1900257-025 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | ---- | ---- | ---- | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_MW03_1001
19_0.2 | CPT000_MW03_1001
19_0.5 | CPT000_MW03_1001
19_1.0 | CPT000_MW03_1001
19_2.0 | CPT_MW08_100119_
0.5 |
|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------------|
| Client sampling date / time | | | | | 10-Jan-2019 10:10 | 10-Jan-2019 10:15 | 10-Jan-2019 10:20 | 10-Jan-2019 10:30 | 10-Jan-2019 13:45 |
| Compound | CAS Number | LOR | Unit | | EM1900257-014 | EM1900257-015 | EM1900257-016 | EM1900257-018 | EM1900257-025 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | 0.6 | 0.6 | ---- | ---- | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | 1.2 | 1.2 | ---- | ---- | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- | <0.05 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_MW03_1001
19_0.2 | CPT000_MW03_1001
19_0.5 | CPT000_MW03_1001
19_1.0 | CPT000_MW03_1001
19_2.0 | CPT_MW08_100119_
0.5 |
|--|--------------------------|-------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------------|
| Client sampling date / time | | | | | 10-Jan-2019 10:10 | 10-Jan-2019 10:15 | 10-Jan-2019 10:20 | 10-Jan-2019 10:30 | 10-Jan-2019 13:45 |
| Compound | CAS Number | LOR | Unit | | EM1900257-014 | EM1900257-015 | EM1900257-016 | EM1900257-018 | EM1900257-025 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | ---- | ---- | ---- | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | ---- | ---- | ---- | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | ---- | ---- | ---- | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | ---- | ---- | ---- | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | ---- | ---- | ---- | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | <50 | ---- | ---- | ---- | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | ---- | ---- | ---- | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | 110 | 100 | ---- | ---- | ---- | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | ---- | ---- | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | 110 | 100 | ---- | ---- | ---- | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | <50 | ---- | ---- | ---- | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | ---- | ---- | ---- | <10 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 117 | 111 | ---- | ---- | ---- | 115 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 88.7 | 74.7 | ---- | ---- | ---- | 90.7 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 77.6 | 67.0 | ---- | ---- | ---- | 76.8 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 92.5 | 78.6 | ---- | ---- | ---- | 87.2 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 116 | 115 | ---- | ---- | ---- | 114 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 96.4 | 87.3 | ---- | ---- | ---- | 87.8 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT000_MW03_1001
19_0.2 | CPT000_MW03_1001
19_0.5 | CPT000_MW03_1001
19_1.0 | CPT000_MW03_1001
19_2.0 | CPT_MW08_100119_
0.5 |
|---|------------|-------|------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------------|
| Client sampling date / time | | | | 10-Jan-2019 10:10 | 10-Jan-2019 10:15 | 10-Jan-2019 10:20 | 10-Jan-2019 10:30 | 10-Jan-2019 13:45 |
| Compound | CAS Number | LOR | Unit | EM1900257-014 | EM1900257-015 | EM1900257-016 | EM1900257-018 | EM1900257-025 |
| | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 97.3 | 87.2 | ---- | ---- | 86.6 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 101 | 91.4 | ---- | ---- | 92.9 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 109 | 105 | ---- | ---- | 109 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 106 | 92.1 | ---- | ---- | 96.0 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 113 | 100 | ---- | ---- | 100 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 92.2 | 88.7 | ---- | ---- | 83.8 |



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|---|------------|-------|-------------|------------------|---------------------|---------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW08_100119_1.0 | CPT_MW08_100119_2.0 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 10-Jan-2019 13:50 | 10-Jan-2019 13:55 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1900257-026 | EM1900257-027 | ----- | ----- | ----- | ----- |
| | | | | Result | Result | ---- | ---- | ---- | ---- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | ---- | 4.2 | ---- | ---- | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 4.6 | 4.5 | ---- | ---- | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 30 | 32 | ---- | ---- | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.05 | 0.05 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.009 | 0.007 | ---- | ---- | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | ---- | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | ---- | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.06 | 0.06 | ---- | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 35 | 36 | ---- | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | 3 | 3 | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.06 | 0.06 | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 35 | 36 | ---- | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 3 | 3 | ---- | ---- | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | ---- | 18.4 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | ---- | <5 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | ---- | <1 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | ---- | <5 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | ---- | 5 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | ---- | <2 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | ---- | 3 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | ---- | <5 | ---- | ---- | ---- | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | ---- | <2 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | ---- | <5 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | ---- | <5 | ---- | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | ---- | <0.1 | ---- | ---- | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | ---- | <0.5 | ---- | ---- | ---- | ---- |



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|--|-------------------|------|-------|------------------|---------------------|---------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW08_100119_1.0 | CPT_MW08_100119_2.0 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 10-Jan-2019 13:50 | 10-Jan-2019 13:55 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900257-026 | EM1900257-027 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | ---- | 70 | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | ---- | <0.1 | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | ---- | <0.2 | ---- | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | ---- | <0.2 | ---- | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | ---- | <0.4 | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | ---- | <0.04 | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |



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|--|-------------------|------|-------|------------------|---------------------|---------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW08_100119_1.0 | CPT_MW08_100119_2.0 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 10-Jan-2019 13:50 | 10-Jan-2019 13:55 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900257-026 | EM1900257-027 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | ---- | <0.2 | ---- | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |



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|---|-------------------|------|-------|------------------|---------------------|---------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW08_100119_1.0 | CPT_MW08_100119_2.0 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 10-Jan-2019 13:50 | 10-Jan-2019 13:55 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900257-026 | EM1900257-027 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | ---- | 0.6 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | ---- | 1.2 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |



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|---|--------------------------|-------|-------|------------------|---------------------|---------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW08_100119_1.0 | CPT_MW08_100119_2.0 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 10-Jan-2019 13:50 | 10-Jan-2019 13:55 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900257-026 | EM1900257-027 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | ---- | <10 | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | ---- | <10 | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | ---- | <100 | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | ---- | <100 | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | ---- | <100 | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | ---- | <100 | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | ---- | <10 | ---- | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | ---- | 107 | ---- | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | ---- | 77.2 | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | ---- | 69.8 | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | ---- | 79.9 | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | ---- | 126 | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | ---- | 94.4 | ---- | ---- | ---- |



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|--|------------|-------|------|-----------------------------|-------------------------|-------------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW08_100119_
1.0 | CPT_MW08_100119_
2.0 | ---- | ---- | ---- |
| | | | | Client sampling date / time | 10-Jan-2019 13:50 | 10-Jan-2019 13:55 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900257-026 | EM1900257-027 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | ---- | 88.0 | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | ---- | 95.8 | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | ---- | 111 | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | ---- | 91.2 | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | ---- | 109 | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | ---- | 88.5 | ---- | ---- | ---- |



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|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC309_100119 | CPT_QC409_100119 | CPT_QC515 | CPT_QC516_100119 | ---- |
| Client sampling date / time | | | | | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900257-010 | EM1900257-011 | EM1900257-012 | EM1900257-023 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 6.15 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | <0.005 | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | <0.004 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |



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|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC309_100119 | CPT_QC409_100119 | CPT_QC515 | CPT_QC516_100119 | ---- |
| Client sampling date / time | | | | | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900257-010 | EM1900257-011 | EM1900257-012 | EM1900257-023 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC309_100119 | CPT_QC409_100119 | CPT_QC515 | CPT_QC516_100119 | ---- |
|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900257-010 | EM1900257-011 | EM1900257-012 | EM1900257-023 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |



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|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC309_100119 | CPT_QC409_100119 | CPT_QC515 | CPT_QC516_100119 | ---- |
| Client sampling date / time | | | | | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900257-010 | EM1900257-011 | EM1900257-012 | EM1900257-023 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 67.7 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 106 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 94.7 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 98.4 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 24.1 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 56.1 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 48.4 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 69.9 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 70.9 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 73.9 | ---- | ---- | ---- | ---- |



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|---|------------|------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC309_100119 | CPT_QC409_100119 | CPT_QC515 | CPT_QC516_100119 | ---- |
| Client sampling date / time | | | | | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | 10-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900257-010 | EM1900257-011 | EM1900257-012 | EM1900257-023 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.25 | % | | 35.1 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.25 | % | | 77.7 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.25 | % | | 58.6 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.25 | % | | 81.7 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.25 | % | | 99.2 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.25 | % | | 86.6 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.25 | % | | 94.0 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.25 | % | | 74.0 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 122 | 99.9 | 115 | 113 | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 101 | 91.4 | 102 | 95.0 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 112 | 101 | 114 | 107 | ---- |



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| Sub-Matrix: SOIL | | □□□□ □ □□□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

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| Sub-Matrix: WATER | | □□□□ □ □□□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 13 | 90 |
| 2-Chlorophenol-D4 | 93951-73-6 | 42 | 117 |
| 2,4,6-Tribromophenol | 118-79-6 | 52 | 140 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 49 | 136 |

| Sub-Matrix: WATER | | 🔍 📄 📊 📈 📉 📌 📁 📂 📅 📆 📇 📈 📉 📌 📁 📂 📅 📆 📇 | |
|--|------------|---------------------------------------|-----|
| Compound | CAS Number | % | |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 49 | 128 |
| 2-Fluorobiphenyl | 321-60-8 | 57 | 137 |
| Anthracene-d10 | 1719-06-8 | 67 | 137 |
| 4-Terphenyl-d14 | 1718-51-0 | 66 | 136 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900257 | Page | : 1 of 14 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 10-Jan-2019 16:40 |
| Order number | : ---- | Date Analysed | : 11-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 18-Jan-2019 18:03 |
| No. of samples received | : 29 | | |
| No. of samples analysed | : 16 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Category C

| Client Sample ID | ALS Sample ID | Compound | Method | LOR | Limits | Result |
|---------------------|---------------|-------------------------|--------|-----|-------------------------|-------------|
| CPT_MW08_100119_0.5 | EM1900257-025 | pH (CaCl ₂) | EA001 | 0.1 | > 4 pH Unit < 9 pH Unit | 3.6 pH Unit |

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| Client Sample ID | ALS Sample ID | Compound | Method | LOR | Limits | Result |
|------------------------|---------------|-------------------------|--------|-----|-------------------------|-------------|
| CPT000_MW02_100119_1.0 | EM1900257-003 | Hexavalent Chromium | EG048G | 0.5 | < 1 mg/kg | 1.0 mg/kg |
| CPT_MW08_100119_0.5 | EM1900257-025 | pH (CaCl ₂) | EA001 | 0.1 | > 4 pH Unit < 9 pH Unit | 3.6 pH Unit |

Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT000_MW0 | | CPT000_MW0 | | CPT000_MW0 | | | |
|--|--------------|------|---------|--------------------|---------|----------------------|---------------|----------------------|---------------|----------------------|--|----------------------|--|
| | | | | Sampling date/time | | 2_100119_1.0 | | 2_100119_2.0 | | QC102_1 | | 3_100119_0.2 | |
| | | | | | | 10-Jan-2019
08:25 | | 10-Jan-2019
08:35 | | 10-Jan-2019
15:00 | | 10-Jan-2019
10:10 | |
| Compound | Method | LOR | Unit | 0000 00 | 0000 00 | EM1900257-003 | EM1900257-005 | EM1900257-013 | EM1900257-014 | EM1900257-015 | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.7 | 5.5 | 5.8 | 6.4 | 6.6 | | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 7 | 5 | 6 | <5 | <5 | | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | <1 | | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 | <5 | <5 | 7 | <5 | | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 11 | 14 | 9 | 19 | 24 | | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | <2 | <2 | | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 9 | 4 | 10 | 7 | 3 | | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | <5 | | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | <2 | | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 | <5 | <5 | 36 | 9 | | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | 1.0 | <0.5 | <0.5 | <0.5 | <0.5 | | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | <1 | <1 | <1 | <1 | | | |
| EK040T: Fluoride Total | | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 230 | 190 | 250 | 80 | 50 | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | <1 | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT000_MW0
2_100119_1.0 | CPT000_MW0
2_100119_2.0 | CPT_QC102_1
00119 | CPT000_MW0
3_100119_0.2 | CPT000_MW0
3_100119_0.5 |
|--|--------------|------|-------|------------------|-------|-------|----------------------------|----------------------------|----------------------|----------------------------|----------------------------|
| Sampling date/time | | | | | | | 10-Jan-2019
08:25 | 10-Jan-2019
08:35 | 10-Jan-2019
15:00 | 10-Jan-2019
10:10 | 10-Jan-2019
10:15 |
| Compound | Method | LOR | Unit | | | | EM1900257-003 | EM1900257-005 | EM1900257-013 | EM1900257-014 | EM1900257-015 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | <50 | <50 | <50 | <50 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT000_MW0
2_100119_1.0 | CPT000_MW0
2_100119_2.0 | CPT_QC102_1
00119 | CPT000_MW0
3_100119_0.2 | CPT000_MW0
3_100119_0.5 | | |
|--|--------------|------|---------|--------------------|-------|----------------------------|----------------------------|----------------------|----------------------------|----------------------------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | □□ □□ | □□□□ | | | | | | □□□□ □□ | □□□□ |
| Compound | Method | LOR | Unit | □□ □□ | □□ □□ | EM1900257-003 | EM1900257-005 | EM1900257-013 | EM1900257-014 | EM1900257-015 | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.7 | 5.5 | 5.8 | 6.4 | 6.6 | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | 7 | 5 | 6 | <5 | <5 | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | <1 | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | <5 | <5 | <5 | 7 | <5 | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 11 | 14 | 9 | 19 | 24 | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | <2 | <2 | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 9 | 4 | 10 | 7 | 3 | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | <2 | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | <5 | <5 | <5 | 36 | 9 | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | 1.0 | <0.5 | <0.5 | <0.5 | <0.5 | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | <1 | <1 | <1 | <1 | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 230 | 190 | 250 | 80 | 50 | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | <1 | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT000_MW0
2_100119_1.0 | CPT000_MW0
2_100119_2.0 | CPT_QC102_1
00119 | CPT000_MW0
3_100119_0.2 | CPT000_MW0
3_100119_0.5 |
|--|--------------|------|-------|--------------------|--------------|--------------|----------------------------|----------------------------|----------------------|----------------------------|----------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 10-Jan-2019
08:25 | 10-Jan-2019
08:35 | 10-Jan-2019
15:00 | 10-Jan-2019
10:10 | 10-Jan-2019
10:15 |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900257-003 | EM1900257-005 | EM1900257-013 | EM1900257-014 | EM1900257-015 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 100 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 650 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 10000 | <50 | <50 | <50 | <50 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT000_MW0
2_100119_1.0 | CPT000_MW0
2_100119_2.0 | CPT_QC102_1
00119 | CPT000_MW0
3_100119_0.2 | CPT000_MW0
3_100119_0.5 |
|--|--------------|------|---------|--------------------|--------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | 10-Jan-2019
08:25
EM1900257-003 | 10-Jan-2019
08:35
EM1900257-005 | 10-Jan-2019
15:00
EM1900257-013 | 10-Jan-2019
10:10
EM1900257-014 | 10-Jan-2019
10:15
EM1900257-015 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.7 | 5.5 | 5.8 | 6.4 | 6.6 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | 7 | 5 | 6 | <5 | <5 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | <5 | <5 | <5 | 7 | <5 |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 11 | 14 | 9 | 19 | 24 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 9 | 4 | 10 | 7 | 3 |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | 36 | 9 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | 1.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | <1 | <1 | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 230 | 190 | 250 | 80 | 50 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT000_MW0
2_100119_1.0 | CPT000_MW0
2_100119_2.0 | CPT_QC102_1
00119 | CPT000_MW0
3_100119_0.2 | CPT000_MW0
3_100119_0.5 |
|--|--------------|------|-------|--------------------|--------------|--------------|----------------------------|----------------------------|----------------------|----------------------------|----------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 10-Jan-2019
08:25 | 10-Jan-2019
08:35 | 10-Jan-2019
15:00 | 10-Jan-2019
10:10 | 10-Jan-2019
10:15 |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900257-003 | EM1900257-005 | EM1900257-013 | EM1900257-014 | EM1900257-015 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | <50 | <50 | <50 | <50 | <50 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT_MW08_1
00119_0.5 | CPT_MW08_1
00119_2.0 | ---- | ---- | ---- | | |
|--|--------------|------|---------|--------------------|--------|-------------------------|-------------------------|-------|-------|-------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | □□ □□ | □□□□ | | | | | | | |
| Compound | Method | LOR | Unit | □□ □ | □□ □ | EM1900257-025 | EM1900257-027 | ----- | ----- | ----- | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 3.6 | 4.2 | ---- | ---- | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | <5 | ---- | ---- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | ---- | ---- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 | <5 | ---- | ---- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | <5 | 5 | ---- | ---- | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | ---- | ---- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | <2 | 3 | ---- | ---- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | ---- | ---- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | ---- | ---- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 | <5 | ---- | ---- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | ---- | ---- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | ---- | ---- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | <1 | ---- | ---- | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | <40 | 70 | ---- | ---- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | ---- | ---- | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | ---- | ---- | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | ---- | ---- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | ---- | ---- | ---- | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT_MW08_1
00119_0.5 | CPT_MW08_1
00119_2.0 | ---- | ---- | ---- |
|--|--------------|------|-------|--------------------|--------------|---------|-------------------------|-------------------------|-------|-------|-------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 10-Jan-2019
13:45 | 10-Jan-2019
13:55 | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | | EM1900257-025 | EM1900257-027 | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | | <0.5 | <0.5 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | | <0.05 | <0.05 | ---- | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | | <0.03 | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | | <10 | <10 | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | | <50 | <50 | ---- | ---- | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C:

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT_MW08_1 | | CPT_MW08_1 | | ---- | | ---- | | ---- | |
|--|--|--|--|---|--|----------------------|--|----------------------|--|---------|--|---------|--|---------|--|
| | | | | Sampling date/time | | 00119_0.5 | | 00119_2.0 | | ---- | | ---- | | ---- | |
| | | | | | | 10-Jan-2019
13:45 | | 10-Jan-2019
13:55 | | ---- | | ---- | | ---- | |
| Compound | | | | Method | | LOR | | Unit | | 0000 00 | | 0000 00 | | 0000 00 | |
| EA001: pH in soil using 0.01M CaCl extract | | | | pH (CaCl2) | | EA001 | | 0.1 | | pH Unit | | 4 | | 9 | |
| EG005T: Total Metals by ICP-AES | | | | Arsenic | | EG005T | | 5 | | mg/kg | | ---- | | 500 | |
| | | | | Cadmium | | EG005T | | 1 | | mg/kg | | ---- | | 100 | |
| | | | | Copper | | EG005T | | 5 | | mg/kg | | ---- | | 5000 | |
| | | | | Lead | | EG005T | | 5 | | mg/kg | | ---- | | 1500 | |
| | | | | Molybdenum | | EG005T | | 2 | | mg/kg | | ---- | | 1000 | |
| | | | | Nickel | | EG005T | | 2 | | mg/kg | | ---- | | 3000 | |
| | | | | Selenium | | EG005T | | 5 | | mg/kg | | ---- | | 50 | |
| | | | | Silver | | EG005T | | 2 | | mg/kg | | ---- | | 180 | |
| | | | | Tin | | EG005T | | 5 | | mg/kg | | ---- | | 500 | |
| | | | | Zinc | | EG005T | | 5 | | mg/kg | | ---- | | 35000 | |
| EG035T: Total Recoverable Mercury by FIMS | | | | Mercury | | EG035T | | 0.1 | | mg/kg | | ---- | | 75 | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | Hexavalent Chromium | | EG048G | | 0.5 | | mg/kg | | ---- | | 500 | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | Total Cyanide | | EK026SF | | 1 | | mg/kg | | ---- | | 2500 | |
| EK040T: Fluoride Total | | | | Fluoride | | EK040T | | 40 | | mg/kg | | ---- | | 10000 | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | Benzene | | EP074-UT | | 0.2 | | mg/kg | | ---- | | 4 | |
| | | | | Sum of monocyclic aromatic hydrocarbons | | EP074-UT-SUM | | 0.2 | | mg/kg | | ---- | | 70 | |
| EP074I: Volatile Halogenated Compounds | | | | Vinyl chloride | | EP074-UT | | 0.02 | | mg/kg | | ---- | | 1.2 | |
| | | | | Hexachlorobutadiene | | EP074-UT | | 0.02 | | mg/kg | | ---- | | 2.8 | |
| | | | | Sum of other chlorinated hydrocarbons | | EP074-UT-SUM | | 0.01 | | mg/kg | | ---- | | 10 | |
| EP075A: Phenolic Compounds (Halogenated) | | | | Sum of Phenols (halogenated) | | EP075-EM-SUM | | 0.03 | | mg/kg | | ---- | | 10 | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | Sum of Phenols (non-halogenated) | | EP075-EM-SUM | | 1 | | mg/kg | | ---- | | 560 | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | | CPT_MW08_1
00119_0.5 | CPT_MW08_1
00119_2.0 | ---- | ---- | ---- |
|--|--------------|------|-------|--------------------|--------------|--------------|-------------------------|-------------------------|-------|-------|-------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 10-Jan-2019
13:45 | 10-Jan-2019
13:55 | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900257-025 | EM1900257-027 | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 5 | <0.5 | <0.5 | ---- | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 100 | <0.5 | <0.5 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | ---- | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 10 | <0.03 | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 650 | <10 | <10 | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 10000 | <50 | <50 | ---- | ---- | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT_MW08_1 | CPT_MW08_1 | ---- | ---- | ---- |
|--|--------------|------|---------|--------------------|----------------------|---------------|---------------|----------------------|------------|-------|------|------|
| | | | | Sampling date/time | 00119_0.5 | | | 00119_2.0 | | | | |
| | | | | | 10-Jan-2019
13:45 | | | 10-Jan-2019
13:55 | | | | |
| Compound | Method | LOR | Unit | □□□ □□
□□□ □□ | □□□□□ □□
□□□ □□ | EM1900257-025 | EM1900257-027 | ----- | ----- | ----- | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 3.6 | 4.2 | ---- | ---- | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | <5 | ---- | ---- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | ---- | ---- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | <5 | <5 | ---- | ---- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | <5 | 5 | ---- | ---- | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | ---- | ---- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | <2 | 3 | ---- | ---- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | ---- | ---- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | ---- | ---- | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | ---- | ---- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | ---- | ---- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | ---- | ---- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | ---- | ---- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | <1 | ---- | ---- | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | <40 | 70 | ---- | ---- | ---- | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | ---- | ---- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | ---- | ---- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | | |
|---|--------------|------|-------|------------------|------|-------|-------------------------|-------------------------|-------|-------|-------|
| Sub-Matrix: SOIL | | | | Client sample ID | | | CPT_MW08_1
00119_0.5 | CPT_MW08_1
00119_2.0 | ---- | ---- | ---- |
| Sampling date/time | | | | | | | 10-Jan-2019
13:45 | 10-Jan-2019
13:55 | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | | | | EM1900257-025 | EM1900257-027 | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | ---- | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | <50 | ---- | ---- | ---- | ---- |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900257 | Page | : 1 of 22 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 10-Jan-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 11-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 18-Jan-2019 |
| Sampler | : SM | | |
| Site | : GIJPP Groundwater Study | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 29 | | |
| No. of samples analysed | : 16 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Senior Acid Sulfate Soil Chemist
Senior Inorganic Chemist
Senior Inorganic Chemist
2IC Organic Chemist
2IC Organic Chemist
Senior Inorganic Instrument Chemist

Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2137558) | | | | | | | | | |
| EM1900178-001 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.0 | 5.0 | 0.00 | 0% - 20% |
| EM1900257-013 | CPT_QC102_100119 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.8 | 5.8 | 0.00 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2139054) | | | | | | | | | |
| EB1900860-001 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 8.6 | 8.6 | 0.00 | 0% - 20% |
| EM1900257-007 | CPT000_MW02_100119_3.0 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.06 | 0.06 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 36 | 35 | 3.69 | 0% - 50% |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 4.4 | 4.4 | 0.00 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2139054) | | | | | | | | | |
| EB1900860-001 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.821 | 0.874 | 6.28 | 0% - 20% |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | 512 | 545 | 6.28 | 0% - 20% |
| EM1900257-007 | CPT000_MW02_100119_3.0 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.005 | <0.005 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA033-D: Retained Acidity (QC Lot: 2139054) | | | | | | | | | |
| EM1900257-007 | CPT000_MW02_100119_3.0 | EA033: sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | 0.04 | 0.04 | 0.00 | No Limit |
| | | EA033: HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | 0.04 | 0.04 | 0.00 | No Limit |
| | | EA033: acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|-----------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2137307) | | | | | | | | | |
| EM1900257-003 | CPT000_MW02_100119_1.0 | EA055: Moisture Content | ---- | 0.1 | % | 21.1 | 22.6 | 7.02 | 0% - 20% |
| EM1900297-001 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 10.1 | 10.0 | 1.02 | 0% - 50% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2137548) | | | | | | | | | |
| EM1900257-003 | CPT000_MW02_100119_1.0 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 9 | 10 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 7 | 6 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 11 | 8 | 22.4 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900258-005 | Anonymous | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 16 | 15 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 7 | 7 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 7 | 7 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900257-003 | CPT000_MW02_100119_1.0 | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 12 | 13 | 0.00 | No Limit |
| | | EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2137547) | | | | | | | |
| EM1900257-003 | | CPT000_MW02_100119_1.0 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 |
| EM1900258-005 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2139519) | | | | | | | | | |
| EM1900178-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900257-013 | CPT_QC102_100119 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 0.6 | 19.5 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2139534) | | | | | | | | | |
| EM1900178-001 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900257-013 | CPT_QC102_100119 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2139169) | | | | | | | | | |
| EM1900257-003 | CPT000_MW02_100119_1.0 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 230 | 200 | 14.2 | No Limit |
| EM1900308-002 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 80 | 80 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2137374) | | | | | | | | | |
| EM1900178-001 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900257-014 | CPT000_MW03_100119_0.2 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2134072) | | | | | | | | | |
| EM1900257-003 | CPT000_MW02_100119_1.0 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900308-003 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2134072) | | | | | | | | | |
| EM1900257-003 | CPT000_MW02_100119_1.0 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900308-003 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2134072) | | | | | | | | | |
| EM1900257-003 | CPT000_MW02_100119_1.0 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|--|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2134072) - continued | | | | | | | | | |
| EM1900257-003 | CPT000_MW02_100119_1.0 | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EM1900308-003 | Anonymous | EP074-UT: 1.1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1.2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.1.1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| | | EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2137372) | | | | | | | |
| EM1900178-001 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1900257-014 | CPT000_MW03_100119_0.2 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2137372) - continued | | | | | | | | | |
| EM1900257-014 | CPT000_MW03_100119_0.2 | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2137372) | | | | | | | | | |
| EM1900178-001 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900257-014 | CPT000_MW03_100119_0.2 | EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900178-001 | Anonymous | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900178-001 | Anonymous | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2137372) - continued | | | | | | | | | |
| EM1900178-001 | Anonymous | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900257-014 | CPT000_MW03_100119_0.2 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2137372) | | | | | | | | | |
| EM1900178-001 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|-----------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2137372) - continued | | | | | | | | | |
| EM1900178-001 | Anonymous | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900257-014 | CPT000_MW03_100119_0.2 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2134072) | | | | | | | | | |
| EM1900257-003 | CPT000_MW02_100119_1.0 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900308-003 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2137373) | | | | | | | | | |
| EM1900178-001 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900257-014 | CPT000_MW03_100119_0.2 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2134072) | | | | | | | | | |
| EM1900257-003 | CPT000_MW02_100119_1.0 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |

EG035F: Dissolved Mercury by FIMS (QC Lot: 2134272)



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2134272) - continued | | | | | | | | | |
| EM1900269-008 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900178-008 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2135189) | | | | | | | | | |
| EM1900178-008 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2136132) | | | | | | | | | |
| EM1900280-006 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EM1900212-006 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | 0.026 | 0.024 | 8.20 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2133862) | | | | | | | | | |
| EM1900257-010 | CPT_QC309_100119 | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900266-004 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.5 | 0.5 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2138292) | | | | | | | | | |
| EM1900178-008 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2138292) | | | | | | | | | |
| EM1900178-008 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2138292) | | | | | | | | | |
| EM1900178-008 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2138292) | | | | | | | | | |
| EM1900178-008 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2132182) | | | | | | | | | |
| EM1900254-001 | Anonymous | EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2132182) - continued | | | | | | | | | |
| EM1900254-001 | Anonymous | EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | | 205-82-3 | | | | | | |
| | | EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Dibenz(a.h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| EP075(SIM): Benzo(g.h.i)perylene | 191-24-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit | | |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2132183) | | | | | | | | | |
| EM1900254-001 | Anonymous | EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2138293) | | | | | | | | | |
| EM1900336-009 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900178-008 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2132183) | | | | | | | | | |
| EM1900254-001 | Anonymous | EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2138293) | | | | | | | | | |
| EM1900336-009 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900178-008 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2138293) | | | | | | | | | |
| EM1900336-009 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EM1900178-008 | Anonymous | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080: BTEXN (QC Lot: 2138293) - continued | | | | | | | | | |
| EM1900178-008 | Anonymous | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-------|-------------|-----------------------------|---------------------------------------|-------|--------------------|---------------------|
| Method: Compound | CAS Number | LOR | Unit | | Result | Spike | Spike Recovery (%) | Recovery Limits (%) |
| | | | | Concentration | | LCS | Low | High |
| EA033-A: Actual Acidity (QCLot: 2139054) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 98.1 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2139054) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 95.5 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-D: Retained Acidity (QCLot: 2139054) | | | | | | | | |
| EA033: Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA033: acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033: sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.02 | 0.052 % S | 90.2 | 70 | 130 |
| EA033: HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | <0.02 | 0.027 % S | 92.7 | 70 | 130 |
| EG005T: Total Metals by ICP-AES (QCLot: 2137548) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 91.1 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 84.7 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 90.8 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 86.2 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 103 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 92.4 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 97.7 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 96.0 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 108 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 89.1 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2137547) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 92.2 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2139519) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 96.1 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2139534) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 97.8 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2139169) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 89.5 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2137374) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 108 | 63 | 118 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2134072) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 83.7 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 88.4 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 83.1 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 83.3 | 66 | 115 |
| | 106-42-3 | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 86.6 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 85.2 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2134072) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 92.2 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2134072) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 70.8 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 78.1 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 87.2 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.7 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 86.5 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.8 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 85.4 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 82.0 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 90.1 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 83.9 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 93.8 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.8 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 91.3 | 71 | 118 |
| EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 91.3 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 78.7 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 86.4 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 84.5 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 85.4 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 82.9 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2137372) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 99.9 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 111 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 119 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 118 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 120 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 109 | 65 | 124 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2137372) - continued | | | | | | | | |
| EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 114 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 116 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2137372) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 102 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 104 | 65 | 126 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 106 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 112 | 53 | 128 |
| EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 100 | 56 | 136 |
| EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 150 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 104 | 48 | 130 |
| EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 107 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 120 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 90.8 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2137372) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 111 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 110 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 120 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 59.7 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 119 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 124 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 125 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 110 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 130 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 120 | 70 | 130 |
| EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 127 | 72 | 134 |
| EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 126 | 72 | 135 |
| EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 127 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2137372) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 95.5 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 108 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 117 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 108 | 72 | 126 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-----------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2137372) - continued | | | | | | | | |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 106 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 108 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 105 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 64 | 137 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 114 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 112 | 72 | 132 |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 116 | 42 | 160 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | # 50.4 | 55 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 122 | 73 | 132 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 132 | 75 | 134 |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 119 | 73 | 133 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 110 | 67 | 133 |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 120 | 67 | 135 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2134072) | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 82.7 | 63 | 122 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2137373) | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 91.2 | 70 | 120 |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 108 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 98.8 | 77 | 117 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2134072) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 83.0 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTE
X | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2137373) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 96.7 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 107 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 83.9 | 68 | 124 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|--------|------|-----------------------------|---------------------------------------|--------------------|---------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | | | Result | LCS | Low |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2134269) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 98.7 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 92.4 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 93.1 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.5 | 83 | 105 |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 99.4 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.2 | 82 | 106 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2134269) - continued | | | | | | | | |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 97.3 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 98.4 | 83 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 99.5 | 85 | 109 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2134271) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 96.9 | 84 | 116 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2134272) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 90.9 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2135189) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 103 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2136132) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 98.5 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2133862) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 103 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2132181) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 73.9 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2138292) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 97.5 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2138292) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 106 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 103 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 98.3 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 101 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 100 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 97.3 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 92.0 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 100 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 95.8 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 106 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 105 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 97.8 | 76 | 112 |
| EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 103 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 122 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2138292) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 102 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 107 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 104 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 112 | 64 | 122 |



Sub-Matrix: **WATER**

| Method Blank (MB) Report | | | | Laboratory Control Spike (LCS) Report | | | | |
|--|-----------------------|-----|------|---------------------------------------|--------------------|------|---------------------|-----|
| | | | | Spike Concentration | Spike Recovery (%) | | Recovery Limits (%) | |
| | | | | | LCS | Low | High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074G: Trihalomethanes (QCLot: 2138292) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 102 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2132182) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 53.8 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 58.6 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 55.7 | 53 | 117 |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 59.6 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 59.4 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 59.0 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 62.2 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 62.7 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 60.2 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 62.3 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2
205-82-3 | 1 | µg/L | <1.0 | 5 µg/L | 59.4 | 56 | 131 |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 62.2 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 59.7 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 62.5 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 62.3 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 64.2 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2132184) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 99.4 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 96.8 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 108 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 109 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 109 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 107 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 20 µg/L | 95.9 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 2 | µg/L | <2 | 40 µg/L | 89.0 | 53 | 125 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 93.6 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2132184) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 4 | µg/L | <4 | 10 µg/L | 48.4 | 18 | 51 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | 10 µg/L | 89.8 | 49 | 106 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | 20 µg/L | 79.1 | 41 | 91 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | 10 µg/L | 93.7 | 48 | 120 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | 10 µg/L | 101 | 47 | 128 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | 60 µg/L | 60.3 | 41 | 130 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | 60 µg/L | 32.3 | 19 | 49 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|---|-----------|------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2132184) - continued | | | | | | | | |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | 60 µg/L | 75.0 | 47 | 126 |
| EP075-EM: Dinoseb | 88-85-7 | 50 | µg/L | <50 | 60 µg/L | 84.0 | 49 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | 50 µg/L | 84.2 | 61 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2132184) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 10 µg/L | 110 | 57 | 126 |
| EP075-EM: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 109 | 62 | 134 |
| EP075-EM: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 105 | 58 | 133 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 101 | 60 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 100 | 59 | 132 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 96.1 | 61 | 137 |
| EP075-EM: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 10 µg/L | 99.6 | 59 | 130 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 96.4 | 59 | 135 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | 10 µg/L | 96.3 | 59 | 128 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2132183) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 61.0 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 65.9 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 64.0 | 55 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2138293) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 97.8 | 65 | 126 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2132183) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 67.4 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 64.8 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 68.6 | 53 | 136 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2138293) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 97.1 | 64 | 124 |
| EP080: BTEXN (QCLot: 2138293) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 102 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 98.5 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 102 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 100 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 102 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 93.4 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2137548) | | | | | | | |
| EM1900257-005 | CPT000_MW02_100119_2.0 | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 81.1 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 90.1 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 96.6 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 98.8 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 95.6 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 90.8 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 92.8 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 87.9 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2137547) | | | | | | | |
| EM1900257-005 | CPT000_MW02_100119_2.0 | EG035T: Mercury | 7439-97-6 | 5 mg/kg | # 75.3 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2139519) | | | | | | | |
| EM1900178-003 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | 83.4 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2139534) | | | | | | | |
| EM1900178-003 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 103 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2139169) | | | | | | | |
| EM1900257-005 | CPT000_MW02_100119_2.0 | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 95.5 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2137374) | | | | | | | |
| EM1900178-007 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 104 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2134072) | | | | | | | |
| EM1900257-005 | CPT000_MW02_100119_2.0 | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 63.5 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 70.9 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2134072) | | | | | | | |
| EM1900257-005 | CPT000_MW02_100119_2.0 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 52.0 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 60.2 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 75.0 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2137372) | | | | | | | |
| EM1900178-003 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 93.2 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 113 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 15.9 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2137372) | | | | | | | |
| EM1900178-003 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 101 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 33.3 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2137372) | | | | | | | |
| EM1900178-003 | Anonymous | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 110 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 118 | 27 | 169 |

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------------|-------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2134072) | | | | | | | |
| EM1900257-005 | CPT000_MW02_100119_2.0 | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 62.0 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2137373) | | | | | | | |
| EM1900178-012 | Anonymous | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 90.6 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 107 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 97.8 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2134072) | | | | | | | |
| EM1900257-005 | CPT000_MW02_100119_2.0 | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 60.2 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2137373) | | | | | | | |
| EM1900178-012 | Anonymous | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 96.2 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 106 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 84.2 | 44 | 126 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|---|------------------|-----------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2134269) | | | | | | | |
| EM1820776-001 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 93.4 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 87.1 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 89.6 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 92.4 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 91.1 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 94.0 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2134272) | | | | | | | |
| EM1900257-010 | CPT_QC309_100119 | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 82.4 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2135189) | | | | | | | |
| EM1900257-010 | CPT_QC309_100119 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 104 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2136132) | | | | | | | |
| EM1900212-007 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 102 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2133862) | | | | | | | |
| EM1900266-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 102 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2138292) | | | | | | | |
| EM1900257-010 | CPT_QC309_100119 | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 99.4 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 81.5 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2138292) | | | | | | | |
| EM1900257-010 | CPT_QC309_100119 | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 94.9 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2138293) | | | | | | | |

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 Work Order : EM1900257
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2138293) - continued | | | | | | | |
| EM1900257-010 | CPT_QC309_100119 | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 73.9 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2138293) | | | | | | | |
| EM1900257-010 | CPT_QC309_100119 | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 72.4 | 44 | 122 |
| EP080: BTEXN (QCLot: 2138293) | | | | | | | |
| EM1900257-010 | CPT_QC309_100119 | EP080: Benzene | 71-43-2 | 20 µg/L | 102 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 95.1 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|---------------------------|-------------------------|------------------------------------|
| Work Order | : EM1900257 | Page | : 1 of 15 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 10-Jan-2019 |
| Site | : GIJPP Groundwater Study | Issue Date | : 18-Jan-2019 |
| Sampler | : SM | No. of samples received | : 29 |
| Order number | : | No. of samples analysed | : 16 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------------|---------|------------|--------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2137372-001 | ---- | Endrin | 72-20-8 | 50.4 % | 55-148% | Recovery less than lower control limit |
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | EM1900257--005 | CPT000_MW02_100119_2.0 | Mercury | 7439-97-6 | 75.3 % | 76-116% | Recovery less than lower data quality objective |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| Container / Client Sample ID(s) | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
CPT_QC309_100119 | ---- | ---- | ---- | 14-Jan-2019 | 10-Jan-2019 | 4 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| Polychlorinated Biphenyls (PCB) | 0 | 2 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 3 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 6 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 2 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 3 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 6 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---------------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | 16-Jan-2019 | 17-Jan-2019 | ✓ | 16-Jan-2019 | 16-Jan-2019 | ✓ |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_MW02_100119_0.5,
CPT000_MW03_100119_1.0,
CPT_MW08_100119_1.0, | CPT000_MW02_100119_3.0,
CPT000_MW03_100119_2.0,
CPT_MW08_100119_2.0 | 10-Jan-2019 | 17-Jan-2019 | 10-Jan-2020 | ✓ | 17-Jan-2019 | 17-Apr-2019 | ✓ |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_MW02_100119_0.5,
CPT000_MW03_100119_1.0,
CPT_MW08_100119_1.0, | CPT000_MW02_100119_3.0,
CPT000_MW03_100119_2.0,
CPT_MW08_100119_2.0 | 10-Jan-2019 | 17-Jan-2019 | 10-Jan-2020 | ✓ | 17-Jan-2019 | 17-Apr-2019 | ✓ |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_MW02_100119_0.5,
CPT000_MW03_100119_1.0,
CPT_MW08_100119_1.0, | CPT000_MW02_100119_3.0,
CPT000_MW03_100119_2.0,
CPT_MW08_100119_2.0 | 10-Jan-2019 | 17-Jan-2019 | 10-Jan-2020 | ✓ | 17-Jan-2019 | 17-Apr-2019 | ✓ |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_MW02_100119_0.5,
CPT000_MW03_100119_1.0,
CPT_MW08_100119_1.0, | CPT000_MW02_100119_3.0,
CPT000_MW03_100119_2.0,
CPT_MW08_100119_2.0 | 10-Jan-2019 | 17-Jan-2019 | 10-Jan-2020 | ✓ | 17-Jan-2019 | 17-Apr-2019 | ✓ |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_MW02_100119_0.5,
CPT000_MW03_100119_1.0,
CPT_MW08_100119_1.0, | CPT000_MW02_100119_3.0,
CPT000_MW03_100119_2.0,
CPT_MW08_100119_2.0 | 10-Jan-2019 | 17-Jan-2019 | 10-Jan-2020 | ✓ | 17-Jan-2019 | 17-Apr-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | ---- | ---- | ---- | 15-Jan-2019 | 24-Jan-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | 17-Jan-2019 | 09-Jul-2019 | ✓ | 17-Jan-2019 | 09-Jul-2019 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | 17-Jan-2019 | 07-Feb-2019 | ✓ | 18-Jan-2019 | 07-Feb-2019 | ✓ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | 17-Jan-2019 | 07-Feb-2019 | ✓ | 17-Jan-2019 | 24-Jan-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✓ | 17-Jan-2019 | 30-Jan-2019 | ✓ |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | 16-Jan-2019 | 07-Feb-2019 | ✓ | 18-Jan-2019 | 07-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✓ | 17-Jan-2019 | 25-Feb-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | 14-Jan-2019 | 17-Jan-2019 | ✓ | 16-Jan-2019 | 17-Jan-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 10-Jan-2019 | 14-Jan-2019 | 17-Jan-2019 | ✔ | 16-Jan-2019 | 17-Jan-2019 | ✔ |
| CPT000_MW02_100119_1.0, | CPT000_MW02_100119_2.0, | | | | | | | |
| CPT_QC102_100119, | CPT000_MW03_100119_0.2, | | | | | | | |
| CPT000_MW03_100119_0.5, | CPT_MW08_100119_0.5, | | | | | | | |
| CPT_MW08_100119_2.0 | | | | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 10-Jan-2019 | 14-Jan-2019 | 17-Jan-2019 | ✔ | 16-Jan-2019 | 17-Jan-2019 | ✔ |
| CPT000_MW02_100119_1.0, | CPT000_MW02_100119_2.0, | | | | | | | |
| CPT_QC102_100119, | CPT000_MW03_100119_0.2, | | | | | | | |
| CPT000_MW03_100119_0.5, | CPT_MW08_100119_0.5, | | | | | | | |
| CPT_MW08_100119_2.0 | | | | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |
| CPT000_MW02_100119_1.0, | CPT000_MW02_100119_2.0, | | | | | | | |
| CPT_QC102_100119, | CPT000_MW03_100119_0.2, | | | | | | | |
| CPT000_MW03_100119_0.5, | CPT_MW08_100119_0.5, | | | | | | | |
| CPT_MW08_100119_2.0 | | | | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |
| CPT000_MW02_100119_1.0, | CPT000_MW02_100119_2.0, | | | | | | | |
| CPT_QC102_100119, | CPT000_MW03_100119_0.2, | | | | | | | |
| CPT000_MW03_100119_0.5, | CPT_MW08_100119_0.5, | | | | | | | |
| CPT_MW08_100119_2.0 | | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |
| CPT000_MW02_100119_1.0, | CPT000_MW02_100119_2.0, | | | | | | | |
| CPT_QC102_100119, | CPT000_MW03_100119_0.2, | | | | | | | |
| CPT000_MW03_100119_0.5, | CPT_MW08_100119_0.5, | | | | | | | |
| CPT_MW08_100119_2.0 | | | | | | | | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |
| CPT000_MW02_100119_1.0, | CPT000_MW02_100119_2.0, | | | | | | | |
| CPT_QC102_100119, | CPT000_MW03_100119_0.2, | | | | | | | |
| CPT000_MW03_100119_0.5, | CPT_MW08_100119_0.5, | | | | | | | |
| CPT_MW08_100119_2.0 | | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|--|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | 14-Jan-2019 | 17-Jan-2019 | ✔ | 16-Jan-2019 | 17-Jan-2019 | ✔ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | 14-Jan-2019 | 17-Jan-2019 | ✔ | 16-Jan-2019 | 17-Jan-2019 | ✔ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT000_MW02_100119_1.0,
CPT_QC102_100119,
CPT000_MW03_100119_0.5,
CPT_MW08_100119_2.0 | CPT000_MW02_100119_2.0,
CPT000_MW03_100119_0.2,
CPT_MW08_100119_0.5, | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✔ | 17-Jan-2019 | 25-Feb-2019 | ✔ |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
CPT_QC309_100119 | 10-Jan-2019 | ---- | ---- | ---- | 14-Jan-2019 | 10-Jan-2019 | ✖ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F)
CPT_QC309_100119 | 10-Jan-2019 | ---- | ---- | ---- | 14-Jan-2019 | 09-Jul-2019 | ✔ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
CPT_QC309_100119 | 10-Jan-2019 | ---- | ---- | ---- | 17-Jan-2019 | 07-Feb-2019 | ✔ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Clear Plastic Bottle - NaOH Filtered (EG050F)
CPT_QC309_100119 | 10-Jan-2019 | ---- | ---- | ---- | 14-Jan-2019 | 07-Feb-2019 | ✔ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| White Plastic Bottle-NaOH (EK026SF)
CPT_QC309_100119 | 10-Jan-2019 | ---- | ---- | ---- | 15-Jan-2019 | 24-Jan-2019 | ✔ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
CPT_QC309_100119 | 10-Jan-2019 | ---- | ---- | ---- | 14-Jan-2019 | 07-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
CPT_QC309_100119 | 10-Jan-2019 | 15-Jan-2019 | 17-Jan-2019 | ✓ | 16-Jan-2019 | 24-Feb-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC309_100119 | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✓ | 16-Jan-2019 | 24-Jan-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC309_100119 | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✓ | 16-Jan-2019 | 24-Jan-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC309_100119 | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✓ | 16-Jan-2019 | 24-Jan-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC309_100119 | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✓ | 16-Jan-2019 | 24-Jan-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
CPT_QC309_100119 | 10-Jan-2019 | 15-Jan-2019 | 17-Jan-2019 | ✓ | 16-Jan-2019 | 24-Feb-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC309_100119 | 10-Jan-2019 | 11-Jan-2019 | 17-Jan-2019 | ✓ | 16-Jan-2019 | 20-Feb-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC309_100119 | 10-Jan-2019 | 11-Jan-2019 | 17-Jan-2019 | ✓ | 16-Jan-2019 | 20-Feb-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC309_100119 | 10-Jan-2019 | 11-Jan-2019 | 17-Jan-2019 | ✓ | 16-Jan-2019 | 20-Feb-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC309_100119 | 10-Jan-2019 | 15-Jan-2019 | 17-Jan-2019 | ✓ | 16-Jan-2019 | 24-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC309_100119,
CPT_QC515, | CPT_QC409_100119,
CPT_QC516_100119
10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✓ | 16-Jan-2019 | 24-Jan-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC309_100119 | 10-Jan-2019 | 15-Jan-2019 | 17-Jan-2019 | ✓ | 16-Jan-2019 | 24-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC309_100119,
CPT_QC515, | CPT_QC409_100119,
CPT_QC516_100119
10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✓ | 16-Jan-2019 | 24-Jan-2019 | ✓ |



Matrix: WATER

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---------------------------------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP080: BTEXN | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080) | | | | | | | | |
| CPT_QC309_100119,
CPT_QC515, | CPT_QC409_100119,
CPT_QC516_100119 | 10-Jan-2019 | 16-Jan-2019 | 24-Jan-2019 | ✔ | 16-Jan-2019 | 24-Jan-2019 | ✔ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | Quality Control Specification | |
|---|----------|-------|---------|----------|----------|-------------------------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | | Evaluation |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Laboratory Control Samples (LCS) | | | | | | | |
|---|------------|---|----|-------|------|---|--------------------------------|
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

Method Blanks (MB)



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 6 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 2 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 3 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 6 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|---|
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| TRH Volatiles/BTEX | EP080 | SOIL | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Preparation Methods | Method | Matrix | Method Descriptions |
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl2 extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |



| Preparation Methods | Method | Matrix | Method Descriptions |
|--|----------|--------|---|
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Volatiles Water Preparation | ORG16-W | SOIL | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

ANZ
FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|---------------------|--|----------|--|----------------|--|--------------------|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: S. McWilliam | | Destination Laboratory | |
| PROJECT MANAGER (PM): [REDACTED] | | SITE: GUPP Groundwater Study | | MOBILE: [REDACTED] | | ALC: | |
| PROJECT NUMBER & TASK CODE: 6092634 | | P.O. NO.: | | EMAIL REPORT TO: [REDACTED] | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: 621096/16 | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | Notes: e.g. Highly contaminated sample
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | |
| COOLER SEAL (circle appropriate)
Inject: Yes No N/A | | | | | | | |
| SAMPLE TEMPERATURE
CHILLED: Yes No | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | CPT-MW17-110119-0.2 | S | 11-01-19 | 0900 | | 1516 | X please freeze |
| 2 | CPT-MW17-110119-0.5 | S | | 0905 | | | X bags for acid |
| 3 | CPT-MW17-110119-1.0 | S | | 0905 | | | X sulfate analysis |
| 4 | CPT-MW17-110119-2.0 | S | | 0905 | | | X |
| 5 | CPT-MW17-110119-3.0 | S | | 0905 | | | X |
| 6 | CPT-MW17-110119-4.0 | S | | 0905 | | | X |
| 7 | CPT-AC309-110119 | W | | | | 6B | X |
| 8 | CPT-AC409-110119 | W | | | | 2V | X |
| 9 | CPT-AC517 | W | | | | 1U | X |
| RECEIVED BY: | | Name: Alice | | Date: 11/11/19 | Name: | Con' Note No: | |
| Name: S. McWilliam | | Date: 11-01-19 | | Time: 1500 | Of: ALS | Date: | Transport Co: |
| Of: AECOM | | | | | | Time: | |
| Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic | | | | | | | |
| V = VOA Vial HCl Preserved; VS = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfate Preserved Amber Glass; H = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; | | | | | | | |
| F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulfate Sols; B = Unpreserved Bag; | | | | | | | |

Environmental Division
Melbourne
Work Order Reference
EM1900336



Telephone : +61-3-6549 9800

COC Page (of 1)

please freeze for Acid sulfate analysis.

[REDACTED]

From: [REDACTED]@aecom.com>
Sent: Monday, 14 January 2019 10:57 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: On Hold - EM1900336 - AECOMAU (60592634)

Hi [REDACTED]

ALS/D

Can you please change the following Sample IDs?

- 007 • CPT_QC309_110119 to CPT_QC310_110119
- 008 • CPT_QC409_110119 to CPT_QC410_110119

Please analyse:

- 001 1. CPT000_MW17_110119_0.2= IWRG621
- 002 2. CPT000_MW17_110119_0.5 = IWRG621
- 003 3. CPT000_MW17_110119_0.5 = SPOCAS (EA029)
- 004 4. CPT000_MW17_110119_2.0 = SPOCAS (EA029)
- 007 5. QC310_100119 = IWRG621 water equivalent
- 008 6. QC410_100119 = TPH(C6-C9)/BTEXN
- 009 7. QC517_100119 = TPH(C6-C9)/BTEXN

At standard TAT. Thanks.

NP(As) 1411

[REDACTED]
Senior Environmental Engineer
[REDACTED]

[REDACTED]@aecom.com

AECOM

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aecom.com

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From: [REDACTED]@alsglobal.com]
Sent: Monday, 14 January 2019 9:25 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: On Hold - EM1900336 - AECOMAU (60592634)

Hi [REDACTED]

Please see attached samples received without analysis.

Thanks

Regards

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1900336**

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 3 |
| Order number | : ---- | Quote number | : EP2016AECOMAU0014 (EN/096/18) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : GIJPP Groundwater Study | | |
| Sampler | : [REDACTED] | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 11-Jan-2019 16:30 | Issue Date | : 14-Jan-2019 |
| Client Requested Due Date | : 21-Jan-2019 | Scheduled Reporting Date | : 21-Jan-2019 |

Delivery Details

| | | | |
|----------------------|-----------|------------------------------------|-----------------------|
| Mode of Delivery | : Carrier | Security Seal | : Not Available |
| No. of coolers/boxes | : 1 | Temperature | : - 2.5 - Ice present |
| Receipt Detail | : | No. of samples received / analysed | : 9 / 6 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
|----------------------|-----------------------------|---------------------|---|------------------------|--------------------------------------|-------------------------|
| EM1900336-001 | 11-Jan-2019 09:40 | CPT_MW17_110119_0.2 | | | ✓ | ✓ |
| EM1900336-002 | 11-Jan-2019 09:45 | CPT_MW17_110119_0.5 | | ✓ | ✓ | ✓ |
| EM1900336-003 | 11-Jan-2019 09:55 | CPT_MW17_110119_1.0 | ✓ | | | |
| EM1900336-004 | 11-Jan-2019 09:55 | CPT_MW17_110119_2.0 | | ✓ | | |
| EM1900336-005 | 11-Jan-2019 10:00 | CPT_MW17_110119_3.0 | ✓ | | | |
| EM1900336-006 | 11-Jan-2019 10:05 | CPT_MW17_110119_4.0 | ✓ | | | |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------------------|
| EM1900336-007 | 11-Jan-2019 00:00 | CPT_QC310_110119 | ✓ | |
| EM1900336-008 | 11-Jan-2019 00:00 | CPT_QC410_110119 | | ✓ |
| EM1900336-009 | 11-Jan-2019 00:00 | CPT_QC517_110119 | | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

| Method | Container | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|----------------------------|--------------------------------|--------------------|------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| CPT_QC310_110119 | Clear Plastic Bottle - Natural | ---- | 11-Jan-2019 | 11-Jan-2019 | ✓ | 14-Jan-2019 | ✗ |

ACCOUNTS PAYABLE

- Email AP_CustomerService.ANZ@aeom.com

- [illegible]

CERTIFICATE OF ANALYSIS

Work Order : **EM1900336**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : [REDACTED] [REDACTED]
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 9
No. of samples analysed : 6

Page : 1 of 15
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 11-Jan-2019 16:30
Date Analysis Commenced : 14-Jan-2019
Issue Date : 22-Jan-2019 13:12



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|--------------------------|---|
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | 2IC Organic Chemist | Melbourne Organics, Springvale, VIC |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG048G: EM1900311 #16, poor matrix spike recovery for Hexavalent Chromium due to sample matrix interferences.
- pH analysis is done under non-stirring condition.
- EG035F: EM1900289 #4 Poor matrix spike recovery for dissolved mercury due to sample matrix. Confirmed by re-extraction and re-analysis.
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- EG035T: EM1900311 #3 Poor matrix spike recovery for Mercury due to matrix effects.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m³ in-situ soil, multiply reported results x wet bulk density of soil in t/m³.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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|--|------------|-------|-------------|------------------|---------------------|---------------------|---------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW17_110119_0.2 | CPT_MW17_110119_0.5 | CPT_MW17_110119_2.0 | ---- | ---- |
| Client sampling date / time | | | | | 11-Jan-2019 09:40 | 11-Jan-2019 09:45 | 11-Jan-2019 09:55 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900336-001 | EM1900336-002 | EM1900336-004 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 4.6 | 4.6 | ---- | ---- | ---- |
| EA029-A: pH Measurements | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 4.4 | 5.2 | ---- | ---- |
| pH OX (23B) | ---- | 0.1 | pH Unit | | ---- | 4.3 | 6.3 | ---- | ---- |
| EA029-B: Acidity Trail | | | | | | | | | |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | 48 | 17 | ---- | ---- |
| Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | | ---- | 57 | 22 | ---- | ---- |
| Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | | ---- | 9 | 5 | ---- | ---- |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.020 | % pyrite S | | ---- | 0.077 | 0.028 | ---- | ---- |
| sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.020 | % pyrite S | | ---- | 0.091 | 0.036 | ---- | ---- |
| sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.020 | % pyrite S | | ---- | <0.020 | <0.020 | ---- | ---- |
| EA029-C: Sulfur Trail | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.020 | % S | | ---- | <0.020 | <0.020 | ---- | ---- |
| Peroxide Sulfur (23De) | ---- | 0.020 | % S | | ---- | <0.020 | <0.020 | ---- | ---- |
| Peroxide Oxidisable Sulfur (23E) | ---- | 0.020 | % S | | ---- | <0.020 | <0.020 | ---- | ---- |
| acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | ---- |
| EA029-D: Calcium Values | | | | | | | | | |
| KCl Extractable Calcium (23Vh) | ---- | 0.020 | % Ca | | ---- | 0.230 | 0.222 | ---- | ---- |
| Peroxide Calcium (23Wh) | ---- | 0.020 | % Ca | | ---- | 0.230 | 0.222 | ---- | ---- |
| Acid Reacted Calcium (23X) | ---- | 0.020 | % Ca | | ---- | <0.020 | <0.020 | ---- | ---- |
| acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | ---- |
| sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.020 | % S | | ---- | <0.020 | <0.020 | ---- | ---- |
| EA029-E: Magnesium Values | | | | | | | | | |
| KCl Extractable Magnesium (23Sm) | ---- | 0.020 | % Mg | | ---- | 0.218 | 0.231 | ---- | ---- |
| Peroxide Magnesium (23Tm) | ---- | 0.020 | % Mg | | ---- | 0.218 | 0.231 | ---- | ---- |
| Acid Reacted Magnesium (23U) | ---- | 0.020 | % Mg | | ---- | <0.020 | <0.020 | ---- | ---- |
| Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | ---- |
| sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.020 | % S | | ---- | <0.020 | <0.020 | ---- | ---- |
| EA029-G: Retained Acidity | | | | | | | | | |
| HCl Extractable Sulfur (20Be) | ---- | 0.020 | % S | | ---- | <0.020 | ---- | ---- | ---- |
| Net Acid Soluble Sulfur (20Je) | ---- | 0.020 | % S | | ---- | <0.020 | ---- | ---- | ---- |



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|--|------------|-------|-------------|------------------|---------------------|---------------------|---------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW17_110119_0.2 | CPT_MW17_110119_0.5 | CPT_MW17_110119_2.0 | ---- | ---- |
| Client sampling date / time | | | | | 11-Jan-2019 09:40 | 11-Jan-2019 09:45 | 11-Jan-2019 09:55 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900336-001 | EM1900336-002 | EM1900336-004 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EA029-G: Retained Acidity - Continued | | | | | | | | | |
| acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | ---- | <10 | | ---- | ---- | ---- |
| sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.020 | % pyrite S | ---- | <0.020 | | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | ---- | 1.5 | 1.5 | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | ---- | 0.08 | 0.03 | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | 48 | 17 | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | 4 | 1 | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | 0.08 | 0.03 | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | 48 | 17 | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | 4 | 1 | ---- | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 21.3 | 26.8 | | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | 6 | <5 | | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | | ---- | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | 33 | 33 | | ---- | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | 22 | 16 | | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | 18 | 13 | | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | | ---- | ---- | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | | ---- | ---- | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | 10 | 5 | | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | | ---- | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | 2 | 2 | | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | 200 | 200 | | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | | ---- | ---- | ---- |

| Client sampling date / time | | | | 11-Jan-2019 09:40 | 11-Jan-2019 09:45 | 11-Jan-2019 09:55 | ---- | ---- |
|--|-------------------|------|-------|-------------------|-------------------|-------------------|-------|-------|
| Compound | CAS Number | LOR | Unit | EM1900336-001 | EM1900336-002 | EM1900336-004 | ----- | ----- |
| | | | | Result | Result | Result | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | ---- | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | <0.2 | <0.2 | ---- | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- |
| EP074H: Naphthalene | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |



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|--|-------------------|------|-------|------------------|---------------------|---------------------|---------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW17_110119_0.2 | CPT_MW17_110119_0.5 | CPT_MW17_110119_2.0 | ---- | ---- |
| Client sampling date / time | | | | | 11-Jan-2019 09:40 | 11-Jan-2019 09:45 | 11-Jan-2019 09:55 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900336-001 | EM1900336-002 | EM1900336-004 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |



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|---|-------------------------|------|-------|------------------|---------------------|---------------------|---------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW17_110119_0.2 | CPT_MW17_110119_0.5 | CPT_MW17_110119_2.0 | ---- | ---- |
| Client sampling date / time | | | | | 11-Jan-2019 09:40 | 11-Jan-2019 09:45 | 11-Jan-2019 09:55 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900336-001 | EM1900336-002 | EM1900336-004 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | 0.6 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | 1.2 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-29-3 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |



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|--|-------------|-------|-------|------------------|---------------------|---------------------|---------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT_MW17_110119_0.2 | CPT_MW17_110119_0.5 | CPT_MW17_110119_2.0 | ---- | ---- |
| Client sampling date / time | | | | | 11-Jan-2019 09:40 | 11-Jan-2019 09:45 | 11-Jan-2019 09:55 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900336-001 | EM1900336-002 | EM1900336-004 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | <10 | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | <10 | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | 110 | <100 | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | 110 | <50 | ---- | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | <10 | ---- | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 106 | 107 | ---- | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 75.6 | 77.5 | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 65.4 | 70.7 | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 77.5 | 86.2 | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 93.3 | 94.8 | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 74.7 | 74.4 | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | 93.1 | 91.6 | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | 86.7 | 85.8 | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | 79.7 | 77.0 | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | 95.5 | 94.8 | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | 92.6 | 92.8 | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | 92.2 | 91.2 | ---- | ---- | ---- |



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|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC310_110119 | CPT_QC410_110119 | CPT_QC517_110119 | ---- | ---- |
| Client sampling date / time | | | | | 11-Jan-2019 00:00 | 11-Jan-2019 00:00 | 11-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900336-007 | EM1900336-008 | EM1900336-009 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 6.09 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | <0.005 | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | <0.004 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |



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|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC310_110119 | CPT_QC410_110119 | CPT_QC517_110119 | ---- | ---- |
| Client sampling date / time | | | | | 11-Jan-2019 00:00 | 11-Jan-2019 00:00 | 11-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900336-007 | EM1900336-008 | EM1900336-009 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | | ---- | ---- | ---- | ---- |
| Indeno(1,2,3.cd)pyrene | 193-39-5 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | <0.5 | | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | <0.5 | | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC310_110119 | CPT_QC410_110119 | CPT_QC517_110119 | ---- | ---- |
| Client sampling date / time | | | | | 11-Jan-2019 00:00 | 11-Jan-2019 00:00 | 11-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900336-007 | EM1900336-008 | EM1900336-009 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC310_110119 | CPT_QC410_110119 | CPT_QC517_110119 | ---- | ---- |
| Client sampling date / time | | | | | 11-Jan-2019 00:00 | 11-Jan-2019 00:00 | 11-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900336-007 | EM1900336-008 | EM1900336-009 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | ---- | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | ---- | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | ---- | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | ---- | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | ---- | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | ---- | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | ---- | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | ---- | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 115 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 99.1 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 87.8 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 90.8 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 31.6 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 78.1 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 79.1 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 100 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 102 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 107 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC310_110119 | CPT_QC410_110119 | CPT_QC517_110119 | ---- | ---- |
| Client sampling date / time | | | | | 11-Jan-2019 00:00 | 11-Jan-2019 00:00 | 11-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900336-007 | EM1900336-008 | EM1900336-009 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.25 | % | | 37.5 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.25 | % | | 94.4 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.25 | % | | 89.8 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.25 | % | | 111 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.25 | % | | 122 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.25 | % | | 109 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.25 | % | | 120 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.25 | % | | 96.8 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 113 | 119 | 118 | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 93.3 | 100 | 93.0 | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 104 | 113 | 107 | ---- | ---- |



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| | | | |
|---|-------------------|------------------|------|
| Sub-Matrix: SOIL | | □□□□ □ □□□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

| | | | |
|---|-------------------|------------------|------|
| Sub-Matrix: WATER | | □□□□ □ □□□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 13 | 90 |
| 2-Chlorophenol-D4 | 93951-73-6 | 42 | 117 |
| 2,4,6-Tribromophenol | 118-79-6 | 52 | 140 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 49 | 136 |

| Sub-Matrix: WATER | | 🔍 📄 📊 📑 ⚙️ | |
|--|------------|------------|-------|
| Compound | CAS Number | % | 📄 📊 📑 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 49 | 128 |
| 2-Fluorobiphenyl | 321-60-8 | 57 | 137 |
| Anthracene-d10 | 1719-06-8 | 67 | 137 |
| 4-Terphenyl-d14 | 1718-51-0 | 66 | 136 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900336 | Page | : 1 of 8 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 11-Jan-2019 16:30 |
| Order number | : ---- | Date Analysed | : 14-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 22-Jan-2019 13:12 |
| No. of samples received | : 9 | | |
| No. of samples analysed | : 6 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT_MW17_1
10119_0.2 | CPT_MW17_1
10119_0.5 | ---- | ---- | ---- | | |
|--|--------------|------|---------|--------------------|--------------|-------------------------|-------------------------|-------|-------|-------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | | | | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | EM1900336-001 | EM1900336-002 | ----- | ----- | ----- | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 4.6 | 4.6 | ---- | ---- | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 6 | <5 | ---- | ---- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | ---- | ---- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 33 | 33 | ---- | ---- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 22 | 16 | ---- | ---- | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | ---- | ---- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 18 | 13 | ---- | ---- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | ---- | ---- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | ---- | ---- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 10 | 5 | ---- | ---- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | ---- | ---- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | ---- | ---- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | 2 | 2 | ---- | ---- | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 200 | 200 | ---- | ---- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | ---- | ---- | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | ---- | ---- | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | ---- | ---- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT_MW17_1
10119_0.2 | CPT_MW17_1
10119_0.5 | ---- | ---- | ---- | | |
|---|--------------|------|-------|--------------------|--------|-------------------------|-------------------------|------|------|------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | Compound | Method | | | | | | LOR | Unit |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | ---- | ---- | ---- | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | ---- | ---- | ---- | | |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | ---- | ---- | ---- | | |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | ---- | ---- | ---- | | |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | ---- | ---- | ---- | | |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | ---- | ---- | ---- | | |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | ---- | ---- | ---- | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | ---- | ---- | ---- | | |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | <50 | ---- | ---- | ---- | | |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT_MW17_1 | | CPT_MW17_1 | | ---- | |
|--|--------------|------|---------|--------------------|-------|-------------------|-------|------------|------|-------|------|
| | | | | Sampling date/time | | 10119_0.2 | | 10119_0.5 | | ---- | |
| | | | | 11-Jan-2019 09:40 | | 11-Jan-2019 09:45 | | ---- | | ---- | |
| | | | | EM1900336-001 | | EM1900336-002 | | ----- | | ----- | |
| Compound | Method | LOR | Unit | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.6 | 4.6 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | 6 | <5 | ---- | ---- | ---- | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | ---- | ---- | ---- | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 33 | 33 | ---- | ---- | ---- | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 22 | 16 | ---- | ---- | ---- | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | ---- | ---- | ---- | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 18 | 13 | ---- | ---- | ---- | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | ---- | ---- | ---- | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | ---- | ---- | ---- | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | ---- | ---- | ---- | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 10 | 5 | ---- | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | ---- | ---- | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | 2 | 2 | ---- | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 200 | 200 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | ---- | ---- | ---- | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | ---- | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | ---- | ---- | ---- | ---- |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | ---- | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | | CPT_MW17_1
10119_0.2 | CPT_MW17_1
10119_0.5 | ---- | ---- | ---- |
|--|--------------|------|-------|--------------------|--------------|--------------|-------------------------|-------------------------|-------|-------|-------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 11-Jan-2019
09:40 | 11-Jan-2019
09:45 | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900336-001 | EM1900336-002 | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 5 | <0.5 | <0.5 | ---- | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 100 | <0.5 | <0.5 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | ---- | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 10 | <0.03 | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 650 | <10 | <10 | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 10000 | <50 | <50 | ---- | ---- | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT_MW17_1
10119_0.2 | CPT_MW17_1
10119_0.5 | ---- | ---- | ---- |
|--|--------------|------|---------|--------------------|--------------|-------------------------|-------------------------|-------|-------|-------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | EM1900336-001 | EM1900336-002 | ----- | ----- | ----- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.6 | 4.6 | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | 6 | <5 | ---- | ---- | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | ---- | ---- | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 33 | 33 | ---- | ---- | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 22 | 16 | ---- | ---- | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | ---- | ---- | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 18 | 13 | ---- | ---- | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | ---- | ---- | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | ---- | ---- | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | ---- | ---- | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 10 | 5 | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | ---- | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | 2 | 2 | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 200 | 200 | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | ---- | ---- | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | | |
|---|--------------|------|-------|------------------|------|-------|-------------------------|-------------------------|-------|-------|-------|
| Sub-Matrix: SOIL | | | | Client sample ID | | | CPT_MW17_1
10119_0.2 | CPT_MW17_1
10119_0.5 | ---- | ---- | ---- |
| Sampling date/time | | | | | | | 11-Jan-2019
09:40 | 11-Jan-2019
09:45 | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | | | | EM1900336-001 | EM1900336-002 | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | ---- | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | <50 | ---- | ---- | ---- | ---- |

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|--|
| Work Order | : EM1900336 | Page | : 1 of 21 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 11-Jan-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 14-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 22-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : GIJPP Groundwater Study | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 9 | | |
| No. of samples analysed | : 6 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Senior Inorganic Chemist
Senior Inorganic Chemist
2IC Organic Chemist
Senior Organic Chemist

Melbourne Inorganics, Springvale, VIC
Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Organics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|---------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2141923) | | | | | | | | | |
| EM1900336-001 | CPT_MW17_110119_0.2 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 4.6 | 4.6 | 0.00 | 0% - 20% |
| EM1900394-007 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 7.3 | 7.6 | 4.03 | 0% - 20% |
| EA029-A: pH Measurements (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | 3.9 | 4.0 | 2.53 | 0% - 20% |
| | | EA029: pH OX (23B) | ---- | 0.1 | pH Unit | 2.8 | 2.8 | 0.00 | 0% - 20% |
| EA029-B: Acidity Trail (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.410 | 0.423 | 3.28 | 0% - 20% |
| | | EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | 0.667 | 0.648 | 2.96 | 0% - 20% |
| | | EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | 0.258 | 0.224 | 13.8 | 0% - 50% |
| | | EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 256 | 264 | 3.28 | 0% - 20% |
| | | EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | 416 | 404 | 2.96 | 0% - 20% |
| | | EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | 161 | 140 | 13.8 | 0% - 20% |
| EA029-C: Sulfur Trail (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | 0.024 | 0.022 | 10.3 | No Limit |
| | | EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | 0.024 | 0.022 | 10.3 | No Limit |
| | | EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | 15 | 14 | 10.3 | No Limit |
| EA029-D: Calcium Values (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | 0.184 | 0.178 | 3.86 | No Limit |
| | | EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | 0.184 | 0.179 | 2.99 | No Limit |
| | | EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | <0.020 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA029-D: Calcium Values (QC Lot: 2141431) - continued | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-E: Magnesium Values (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | 0.132 | 0.132 | 0.00 | No Limit |
| | | EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | 0.132 | 0.132 | 0.00 | No Limit |
| | | EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-G: Retained Acidity (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-H: Acid Base Accounting (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 0.00 | No Limit |
| | | EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.43 | 0.44 | 2.56 | 0% - 20% |
| | | EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.43 | 0.44 | 2.56 | 0% - 20% |
| | | EA029: Liming Rate | ---- | 1 | kg CaCO3/t | 20 | 21 | 0.00 | 0% - 20% |
| | | EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 20 | 21 | 0.00 | 0% - 20% |
| | | EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 271 | 278 | 2.56 | 0% - 20% |
| | | EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 271 | 278 | 2.56 | 0% - 20% |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2137326) | | | | | | | | | |
| EM1900311-002 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 6.4 | 6.6 | 1.92 | No Limit |
| EM1900311-021 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 7.8 | 8.0 | 2.02 | No Limit |
| EG005T: Total Metals by ICP-AES (QC Lot: 2138956) | | | | | | | | | |
| EM1900311-002 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 11 | 11 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 9 | 7 | 21.6 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 125 | 108 | 15.1 | 0% - 20% |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 170 | 149 | 13.6 | 0% - 20% |
| EM1900311-020 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|---------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005T: Total Metals by ICP-AES (QC Lot: 2138956) - continued | | | | | | | | | |
| EM1900311-020 | Anonymous | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 51 | 59 | 14.0 | 0% - 20% |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 6 | 6 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 12 | 11 | 11.9 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 28 | 30 | 6.33 | No Limit |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2138957) | | | | | | | | | |
| EM1900311-002 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900311-020 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2141114) | | | | | | | | | |
| EM1900311-010 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900353-012 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2141666) | | | | | | | | | |
| EM1900311-003 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | 2 | 1 | 0.00 | No Limit |
| EM1900311-022 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | 210 | 190 | 10.4 | 0% - 50% |
| EK040T: Fluoride Total (QC Lot: 2139415) | | | | | | | | | |
| EM1900336-001 | CPT_MW17_110119_0.2 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 200 | 210 | 0.00 | No Limit |
| EM1900394-002 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 210 | 260 | 19.6 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2137382) | | | | | | | | | |
| EM1900336-001 | CPT_MW17_110119_0.2 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900394-007 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2135056) | | | | | | | | | |
| EM1900309-026 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900309-050 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2135056) | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|-------------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074H: Naphthalene (QC Lot: 2135056) - continued | | | | | | | | | |
| EM1900309-026 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900309-050 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2135056) | | | | | | | | | |
| EM1900309-026 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EM1900309-050 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|---------------------|---|----------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2135056) - continued | | | | | | | | | |
| EM1900309-050 | Anonymous | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2137380) | | | | | | | | | |
| EM1900336-001 | CPT_MW17_110119_0.2 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | 0-2 | | | | | | | |
| EM1900394-007 | Anonymous | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900336-001 | CPT_MW17_110119_0.2 | 0-2 | | | | | | | |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900394-007 | Anonymous | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900336-001 | CPT_MW17_110119_0.2 | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|---------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2137380) - continued | | | | | | | | | |
| EM1900394-007 | Anonymous | EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2137380) | | | | | | | | | |
| EM1900336-001 | CPT_MW17_110119_0.2 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenzo(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900394-007 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenzo(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2137380) | | | | | | | | | |
| EM1900336-001 | CPT_MW17_110119_0.2 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|---------------------|-----------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2137380) - continued | | | | | | | | | |
| EM1900336-001 | CPT_MW17_110119_0.2 | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900394-007 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2135056) | | | | | | | | | |
| EM1900309-026 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900309-050 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|---------------------|---|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2137381) | | | | | | | | | |
| EM1900336-001 | CPT_MW17_110119_0.2 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900394-007 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2135056) | | | | | | | | | |
| EM1900309-026 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900309-050 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2137381) | | | | | | | | | |
| EM1900336-001 | CPT_MW17_110119_0.2 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | 110 | <100 | 13.2 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900394-007 | Anonymous | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2135873) | | | | | | | | | |
| EM1900309-010 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 6.22 | 6.27 | 0.801 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2134853) | | | | | | | | | |
| EM1900309-009 | Anonymous | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2134854) | | | | | | | | | |
| EM1900334-009 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | 0.0002 | 0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.011 | 0.010 | 11.3 | 0% - 50% |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | 0.015 | 0.016 | 8.37 | 0% - 50% |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.276 | 0.307 | 10.9 | 0% - 20% |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 4.79 | 5.81 | 19.2 | 0% - 20% |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | 0.01 | 0.01 | 0.00 | No Limit |
| EM1900334-018 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.007 | 0.007 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.005 | 0.005 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 0.003 | 0.003 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2134854) - continued | | | | | | | | | |
| EM1900334-018 | Anonymous | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.057 | 0.056 | 2.99 | 0% - 20% |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.029 | 0.027 | 8.85 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2134852) | | | | | | | | | |
| EM1900309-048 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900289-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | 0.0006 | 0.0006 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2135189) | | | | | | | | | |
| EM1900178-008 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2136134) | | | | | | | | | |
| EM1900283-001 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | 0.029 | 0.027 | 4.81 | No Limit |
| EM1900280-013 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2135874) | | | | | | | | | |
| EM1900309-010 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2138292) | | | | | | | | | |
| EM1900178-008 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2138292) | | | | | | | | | |
| EM1900178-008 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2138292) | | | | | | | | | |
| EM1900178-008 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2138292) | | | | | | | | | |
| EM1900178-008 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2138293) | | | | | | | | | |
| EM1900336-009 | CPT_QC517_110119 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900178-008 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2138293) | | | | | | | | | |
| EM1900336-009 | CPT_QC517_110119 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900178-008 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2138293) | | | | | | | | | |
| EM1900336-009 | CPT_QC517_110119 | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EM1900178-008 | Anonymous | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA029-A: pH Measurements (QCLot: 2141431) | | | | | | | | |
| EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA029: pH OX (23B) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA029-B: Acidity Trail (QCLot: 2141431) | | | | | | | | |
| EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 97.7 | 70 | 130 |
| EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | <2 | 29.1 mole H+ / t | 92.3 | 70 | 130 |
| EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | <2 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-C: Sulfur Trail (QCLot: 2141431) | | | | | | | | |
| EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | 0.052 % S | 93.8 | 70 | 130 |
| EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | <0.020 | 0.145 % S | 113 | 70 | 130 |
| EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029-D: Calcium Values (QCLot: 2141431) | | | | | | | | |
| EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | <0.020 | 0.151 % Ca | 114 | 70 | 130 |
| EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | <0.020 | 0.296 % Ca | 110 | 70 | 130 |
| EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-E: Magnesium Values (QCLot: 2141431) | | | | | | | | |
| EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | <0.020 | 0.176 % Mg | 110 | 70 | 130 |
| EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | <0.020 | 0.175 % Mg | 119 | 70 | 130 |
| EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | ---- | ---- | ---- | ---- |
| EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-G: Retained Acidity (QCLot: 2141431) | | | | | | | | |
| EA029: Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | <0.020 | 0.027 % S | 91.0 | 70 | 130 |
| EA029-H: Acid Base Accounting (QCLot: 2141431) | | | | | | | | |
| EA029: ANC Fineness Factor | ---- | 0.5 | - | <0.5 | ---- | ---- | ---- | ---- |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA029-H: Acid Base Accounting (QCLot: 2141431) - continued | | | | | | | | |
| EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES (QCLot: 2138956) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 96.3 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 89.3 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 93.7 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 94.5 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 100 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 97.6 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 97.7 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 81.2 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 105 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 99.1 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2138957) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 79.2 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2141114) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 93.3 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2141666) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 101 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2139415) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 90.2 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2137382) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 87.2 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2135056) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 95.1 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 91.8 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 92.6 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 91.5 | 66 | 115 |
| | 106-42-3 | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 87.8 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 87.6 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2135056) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 92.5 | 75 | 113 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-------------|------|-------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074I: Volatile Halogenated Compounds (QCLot: 2135056) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 92.8 | 51 | 136 |
| EP074-UT: 1.1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 92.2 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 97.0 | 70 | 117 |
| EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 98.6 | 61 | 122 |
| EP074-UT: cis-1.2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 98.0 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 106 | 69 | 112 |
| EP074-UT: 1.1.1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 95.0 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 92.3 | 56 | 126 |
| EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 86.7 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 95.7 | 66 | 117 |
| EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 83.5 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.8 | 62 | 120 |
| EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 95.0 | 71 | 118 |
| EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 75.4 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 109 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 94.6 | 73 | 114 |
| EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 96.0 | 66 | 114 |
| EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 91.3 | 73 | 110 |
| EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 96.5 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2137380) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 82.3 | 69 | 123 |
| EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 88.6 | 55 | 128 |
| EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 96.0 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 101 | 56 | 128 |
| EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 101 | 66 | 126 |
| EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 101 | 60 | 126 |
| EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 90.2 | 65 | 124 |
| EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/5 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 91.2 | 64 | 128 |
| | 8-90-2 | | | | | | | |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 95.6 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2137380) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 86.3 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 87.9 | 65 | 126 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 87.1 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 88.2 | 53 | 128 |
| EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 80.9 | 56 | 136 |
| EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 84.8 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 99.5 | 48 | 130 |
| EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 117 | 47 | 125 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2137380) - continued | | | | | | | | |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 99.9 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 82.9 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2137380) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 95.2 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 92.7 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 101 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 98.2 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 97.2 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 55.7 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 99.9 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 105 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 106 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 112 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 106 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 107 | 72 | 134 |
| EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 107 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 108 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2137380) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 90.2 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 80.0 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 96.8 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 91.0 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 99.8 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 93.1 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 89.8 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 90.3 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 88.6 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 90.3 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 89.0 | 64 | 137 |
| EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 97.4 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 95.4 | 72 | 132 |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 97.1 | 42 | 160 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 90.7 | 55 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 73 | 132 |
| EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 112 | 75 | 134 |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 100 | 73 | 133 |
| EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 124 | 67 | 133 |

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2137380) - continued | | | | | | | | |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 110 | 67 | 135 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2135056) | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 95.9 | 63 | 122 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2137381) | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 107 | 70 | 120 |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 114 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 108 | 77 | 117 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2135056) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 95.2 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2137381) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 114 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 111 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 103 | 68 | 124 |

| Sub-Matrix: WATER | | | | Method Blank (MB) Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|--------|------|--------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | LCS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2134853) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 101 | 84 | 116 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2134854) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 103 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 99.4 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 98.0 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.2 | 83 | 105 |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 99.2 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 99.0 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 92.2 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 83 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 102 | 85 | 109 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2134852) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 97.0 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2135189) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 103 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2136134) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 95.8 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2135874) | | | | | | | | |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EP040P: Fluoride by PC Titrator (QCLot: 2135874) - continued | | | | | | | | |
| EP040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 90.4 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2134999) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 123 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2138292) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 97.5 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2138292) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 106 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 103 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 98.3 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 101 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 100 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 97.3 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 92.0 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 100 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 95.8 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 106 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 105 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 97.8 | 76 | 112 |
| EP074: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 103 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 122 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2138292) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 102 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 107 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 104 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 112 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2138292) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 102 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2135000) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 95.8 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 98.8 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 90.5 | 53 | 117 |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 90.6 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 91.7 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 92.8 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 93.3 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 93.5 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 97.3 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 92.5 | 57 | 122 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2135000) - continued | | | | | | | | |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | 5 µg/L | 104 | 56 | 131 |
| | 205-82-3 | | | | | | | |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 103 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 106 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 93.5 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 94.5 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 95.2 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2134995) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 90.9 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 91.0 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 100 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 105 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 102 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 105 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 20 µg/L | 90.2 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5 | 2 | µg/L | <2 | 30 µg/L | 106 | 53 | 125 |
| | 8-90-2 | | | | | | | |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 93.8 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2134995) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 4 | µg/L | <4 | 10 µg/L | 41.0 | 18 | 51 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | 10 µg/L | 88.6 | 49 | 106 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | 20 µg/L | 77.9 | 41 | 91 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | 10 µg/L | 89.4 | 48 | 120 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | 10 µg/L | 96.5 | 47 | 128 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | 60 µg/L | 63.5 | 41 | 130 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | 60 µg/L | 30.0 | 19 | 49 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | 60 µg/L | 78.4 | 47 | 126 |
| EP075-EM: Dinoseb | 88-85-7 | 50 | µg/L | <50 | 60 µg/L | 83.7 | 49 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | 50 µg/L | 95.0 | 61 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2134995) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 10 µg/L | 113 | 57 | 126 |
| EP075-EM: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 103 | 62 | 134 |
| EP075-EM: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 98.6 | 58 | 133 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 96.3 | 60 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 96.1 | 59 | 132 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 91.3 | 61 | 137 |
| EP075-EM: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 10 µg/L | 94.3 | 59 | 130 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 91.8 | 59 | 135 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2134995) - continued | | | | | | | | |
| EP075-EM: 4,4`-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | 10 µg/L | 93.0 | 59 | 128 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2135001) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 98.0 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 111 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 100 | 55 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2138293) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 97.8 | 65 | 126 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2135001) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 107 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 107 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 100 | 53 | 136 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2138293) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 97.1 | 64 | 124 |
| EP080: BTEXN (QCLot: 2138293) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 102 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 98.5 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 102 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 100 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 102 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 93.4 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------|------------|--------------------------|--------------------------|---------------------|------|
| | | | | Spike
Concentration | Spike Recovery (%)
MS | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | | | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2138956) | | | | | | | |
| EM1900311-003 | Anonymous | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 88.7 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 93.1 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 96.7 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 100 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 96.8 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 95.5 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 81.1 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 105 | 74 | 128 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|---------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2138957) | | | | | | | |
| EM1900311-003 | Anonymous | EG035T: Mercury | 7439-97-6 | 5 mg/kg | # 74.8 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2141114) | | | | | | | |
| EM1900311-016 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | # 0.923 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2141666) | | | | | | | |
| EM1900311-004 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 100 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2139415) | | | | | | | |
| EM1900336-002 | CPT_MW17_110119_0.5 | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 106 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2137382) | | | | | | | |
| EM1900364-001 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 92.6 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2135056) | | | | | | | |
| EM1900309-027 | Anonymous | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 85.2 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 83.6 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2135056) | | | | | | | |
| EM1900309-027 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 88.7 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 80.8 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 83.0 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2137380) | | | | | | | |
| EM1900336-002 | CPT_MW17_110119_0.5 | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 85.4 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 100 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 91.8 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2137380) | | | | | | | |
| EM1900336-002 | CPT_MW17_110119_0.5 | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 86.9 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 52.2 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2137380) | | | | | | | |
| EM1900336-002 | CPT_MW17_110119_0.5 | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 92.8 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 101 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2135056) | | | | | | | |
| EM1900309-027 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 75.9 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2137381) | | | | | | | |
| EM1900392-001 | Anonymous | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 104 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 112 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 106 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2135056) | | | | | | | |
| EM1900309-027 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 72.6 | 42 | 106 |



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|-------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2137381) | | | | | | | |
| EM1900392-001 | Anonymous | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 111 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 110 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 108 | 44 | 126 |
| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2134854) | | | | | | | |
| EM1900334-009 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 95.7 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 98.8 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 84.9 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 90.0 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 83.2 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | # Not Determined | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2134852) | | | | | | | |
| EM1900289-004 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | # 16.2 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2135189) | | | | | | | |
| EM1900257-010 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 104 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2136134) | | | | | | | |
| EM1900280-008 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 99.9 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2135874) | | | | | | | |
| EM1900309-024 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 88.7 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2138292) | | | | | | | |
| EM1900257-010 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 99.4 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 81.5 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2138292) | | | | | | | |
| EM1900257-010 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 94.9 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2138293) | | | | | | | |
| EM1900257-010 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 73.9 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2138293) | | | | | | | |
| EM1900257-010 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 72.4 | 44 | 122 |
| EP080: BTEXN (QCLot: 2138293) | | | | | | | |
| EM1900257-010 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 102 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 95.1 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : EM1900336

Page : 1 of 13

Client : AECOM Australia Pty Ltd
Contact :
Project : 60592634
Site : GIJPP Groundwater Study
Sampler :
Order number :

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 11-Jan-2019
Issue Date : 22-Jan-2019
No. of samples received : 9
No. of samples analysed : 6

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|---------------------|------------|---------|---------|---|
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | EM1900311--003 | Anonymous | Mercury | 7439-97-6 | 74.8 % | 76-116% | Recovery less than lower data quality objective |
| EG048: Hexavalent Chromium (Alkaline Digest) | EM1900311--016 | Anonymous | Hexavalent Chromium | 18540-29-9 | 0.923 % | 58-114% | Recovery less than lower data quality objective |

Matrix: **WATER**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|-------------------------------------|----------------------|------------------|---------|------------|----------------|---------|---|
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG020F: Dissolved Metals by ICP-MS | EM1900334--009 | Anonymous | Zinc | 7440-66-6 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |
| EG035F: Dissolved Mercury by FIMS | EM1900289--004 | Anonymous | Mercury | 7439-97-6 | 16.2 % | 70-120% | Recovery less than lower data quality objective |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
CPT_QC310_110119 | ---- | ---- | ---- | 15-Jan-2019 | 11-Jan-2019 | 4 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 9 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | 1 | 11 | 9.09 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 9 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 9 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 9 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 9 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 9 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 9 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 9 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Evaluation | Analysis | | |
|---|---------------------|--------------------------|--------------------|-------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 18-Jan-2019 | 18-Jan-2019 | ✓ | 18-Jan-2019 | 18-Jan-2019 | ✓ |
| EA029-A: pH Measurements | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT_MW17_110119_0.5, | CPT_MW17_110119_2.0 | 11-Jan-2019 | 18-Jan-2019 | 06-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-B: Acidity Trail | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT_MW17_110119_0.5, | CPT_MW17_110119_2.0 | 11-Jan-2019 | 18-Jan-2019 | 06-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-C: Sulfur Trail | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT_MW17_110119_0.5, | CPT_MW17_110119_2.0 | 11-Jan-2019 | 18-Jan-2019 | 06-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-D: Calcium Values | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT_MW17_110119_0.5, | CPT_MW17_110119_2.0 | 11-Jan-2019 | 18-Jan-2019 | 06-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-E: Magnesium Values | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT_MW17_110119_0.5, | CPT_MW17_110119_2.0 | 11-Jan-2019 | 18-Jan-2019 | 06-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-F: Excess Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT_MW17_110119_0.5, | CPT_MW17_110119_2.0 | 11-Jan-2019 | 18-Jan-2019 | 06-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-G: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT_MW17_110119_0.5, | CPT_MW17_110119_2.0 | 11-Jan-2019 | 18-Jan-2019 | 06-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-H: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT_MW17_110119_0.5, | CPT_MW17_110119_2.0 | 11-Jan-2019 | 18-Jan-2019 | 06-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | ---- | ---- | ---- | 15-Jan-2019 | 25-Jan-2019 | ✓ |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 17-Jan-2019 | 10-Jul-2019 | ✓ | 18-Jan-2019 | 10-Jul-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 17-Jan-2019 | 08-Feb-2019 | ✓ | 18-Jan-2019 | 08-Feb-2019 | ✓ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 17-Jan-2019 | 08-Feb-2019 | ✓ | 18-Jan-2019 | 24-Jan-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 17-Jan-2019 | 25-Jan-2019 | ✓ | 18-Jan-2019 | 31-Jan-2019 | ✓ |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 18-Jan-2019 | 08-Feb-2019 | ✓ | 21-Jan-2019 | 08-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 17-Jan-2019 | 25-Jan-2019 | ✓ | 18-Jan-2019 | 26-Feb-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 15-Jan-2019 | 18-Jan-2019 | ✓ | 16-Jan-2019 | 18-Jan-2019 | ✓ |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 15-Jan-2019 | 18-Jan-2019 | ✓ | 16-Jan-2019 | 18-Jan-2019 | ✓ |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 15-Jan-2019 | 18-Jan-2019 | ✓ | 16-Jan-2019 | 18-Jan-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 17-Jan-2019 | 25-Jan-2019 | ✓ | 18-Jan-2019 | 26-Feb-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 17-Jan-2019 | 25-Jan-2019 | ✓ | 18-Jan-2019 | 26-Feb-2019 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 17-Jan-2019 | 25-Jan-2019 | ✓ | 18-Jan-2019 | 26-Feb-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 17-Jan-2019 | 25-Jan-2019 | ✓ | 18-Jan-2019 | 26-Feb-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 15-Jan-2019 | 18-Jan-2019 | ✓ | 16-Jan-2019 | 18-Jan-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 17-Jan-2019 | 25-Jan-2019 | ✓ | 18-Jan-2019 | 26-Feb-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|---------------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 15-Jan-2019 | 18-Jan-2019 | ✔ | 16-Jan-2019 | 18-Jan-2019 | ✔ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT_MW17_110119_0.2, | CPT_MW17_110119_0.5 | 11-Jan-2019 | 17-Jan-2019 | 25-Jan-2019 | ✔ | 18-Jan-2019 | 26-Feb-2019 | ✔ |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Evaluation | Analysis | |
|---|-------------|--------------------------|--------------------|------|-------------|---------------|------------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | | | Date analysed | Due for analysis |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
CPT_QC310_110119 | 11-Jan-2019 | ---- | ---- | ---- | 15-Jan-2019 | 11-Jan-2019 | ✖ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F)
CPT_QC310_110119 | 11-Jan-2019 | ---- | ---- | ---- | 15-Jan-2019 | 10-Jul-2019 | ✓ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
CPT_QC310_110119 | 11-Jan-2019 | ---- | ---- | ---- | 17-Jan-2019 | 08-Feb-2019 | ✓ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Opaque plastic bottle - NaOH (EG050F)
CPT_QC310_110119 | 11-Jan-2019 | ---- | ---- | ---- | 14-Jan-2019 | 08-Feb-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| Opaque plastic bottle - NaOH (EK026SF)
CPT_QC310_110119 | 11-Jan-2019 | ---- | ---- | ---- | 15-Jan-2019 | 25-Jan-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
CPT_QC310_110119 | 11-Jan-2019 | ---- | ---- | ---- | 15-Jan-2019 | 08-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
CPT_QC310_110119 | 11-Jan-2019 | 14-Jan-2019 | 18-Jan-2019 | ✓ | 21-Jan-2019 | 23-Feb-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC310_110119 | 11-Jan-2019 | 16-Jan-2019 | 25-Jan-2019 | ✓ | 16-Jan-2019 | 25-Jan-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC310_110119 | 11-Jan-2019 | 16-Jan-2019 | 25-Jan-2019 | ✓ | 16-Jan-2019 | 25-Jan-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC310_110119 | 11-Jan-2019 | 16-Jan-2019 | 25-Jan-2019 | ✓ | 16-Jan-2019 | 25-Jan-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC310_110119 | 11-Jan-2019 | 16-Jan-2019 | 25-Jan-2019 | ✓ | 16-Jan-2019 | 25-Jan-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
CPT_QC310_110119 | 11-Jan-2019 | 14-Jan-2019 | 18-Jan-2019 | ✓ | 21-Jan-2019 | 23-Feb-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC310_110119 | 11-Jan-2019 | 14-Jan-2019 | 18-Jan-2019 | ✓ | 21-Jan-2019 | 23-Feb-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC310_110119 | 11-Jan-2019 | 14-Jan-2019 | 18-Jan-2019 | ✓ | 21-Jan-2019 | 23-Feb-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC310_110119 | 11-Jan-2019 | 14-Jan-2019 | 18-Jan-2019 | ✓ | 21-Jan-2019 | 23-Feb-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC310_110119 | 11-Jan-2019 | 14-Jan-2019 | 18-Jan-2019 | ✓ | 21-Jan-2019 | 23-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC310_110119, CPT_QC410_110119,
CPT_QC517_110119 | 11-Jan-2019 | 16-Jan-2019 | 25-Jan-2019 | ✓ | 16-Jan-2019 | 25-Jan-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC310_110119 | 11-Jan-2019 | 14-Jan-2019 | 18-Jan-2019 | ✓ | 21-Jan-2019 | 23-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC310_110119, CPT_QC410_110119,
CPT_QC517_110119 | 11-Jan-2019 | 16-Jan-2019 | 25-Jan-2019 | ✓ | 16-Jan-2019 | 25-Jan-2019 | ✓ |
| EP080: BTEXN | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC310_110119, CPT_QC410_110119,
CPT_QC517_110119 | 11-Jan-2019 | 16-Jan-2019 | 25-Jan-2019 | ✓ | 16-Jan-2019 | 25-Jan-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | Quality Control Specification | |
|---|----------|-------|---------|----------|----------|-------------------------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | | Evaluation |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 8 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 16 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 16 | 6.25 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 16 | 6.25 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 16 | 6.25 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 2 | 12 | 16.67 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 1 | 200.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 9 | 11.11 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 10 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 9 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 1 | 11 | 9.09 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 9 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 9 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 9 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 1 | 100.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 9 | 11.11 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 10 | 10.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 9 | 11.11 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 9 | 11.11 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 9 | 11.11 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 9 | 11.11 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 10 | 10.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 10 | 10.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 9 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 9 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 9 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 9 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | SOIL | In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|--|
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |

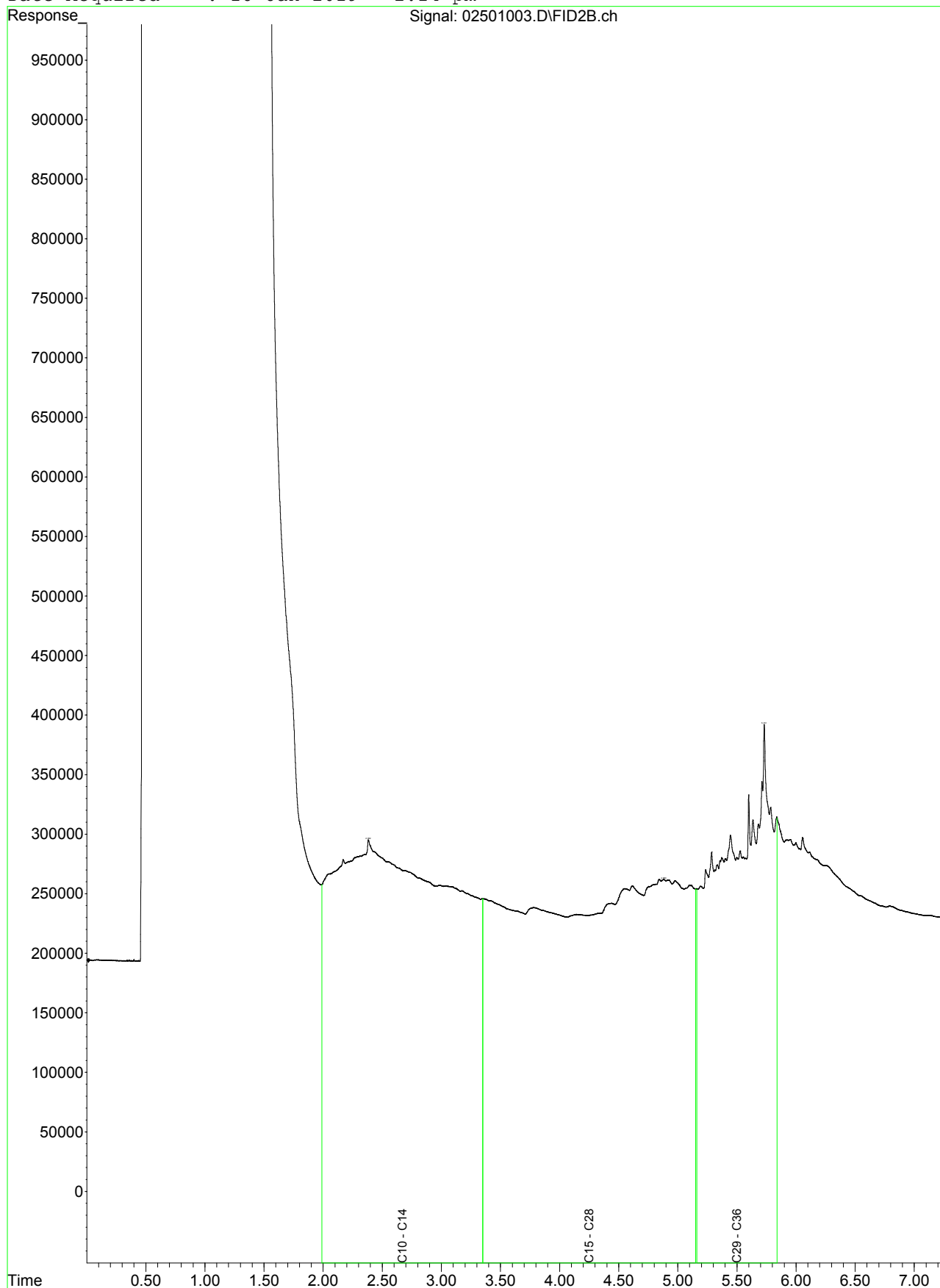


| Analytical Methods | Method | Matrix | Method Descriptions |
|--|------------|--------|---|
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Preparation Methods | Method | Matrix | Method Descriptions |
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |

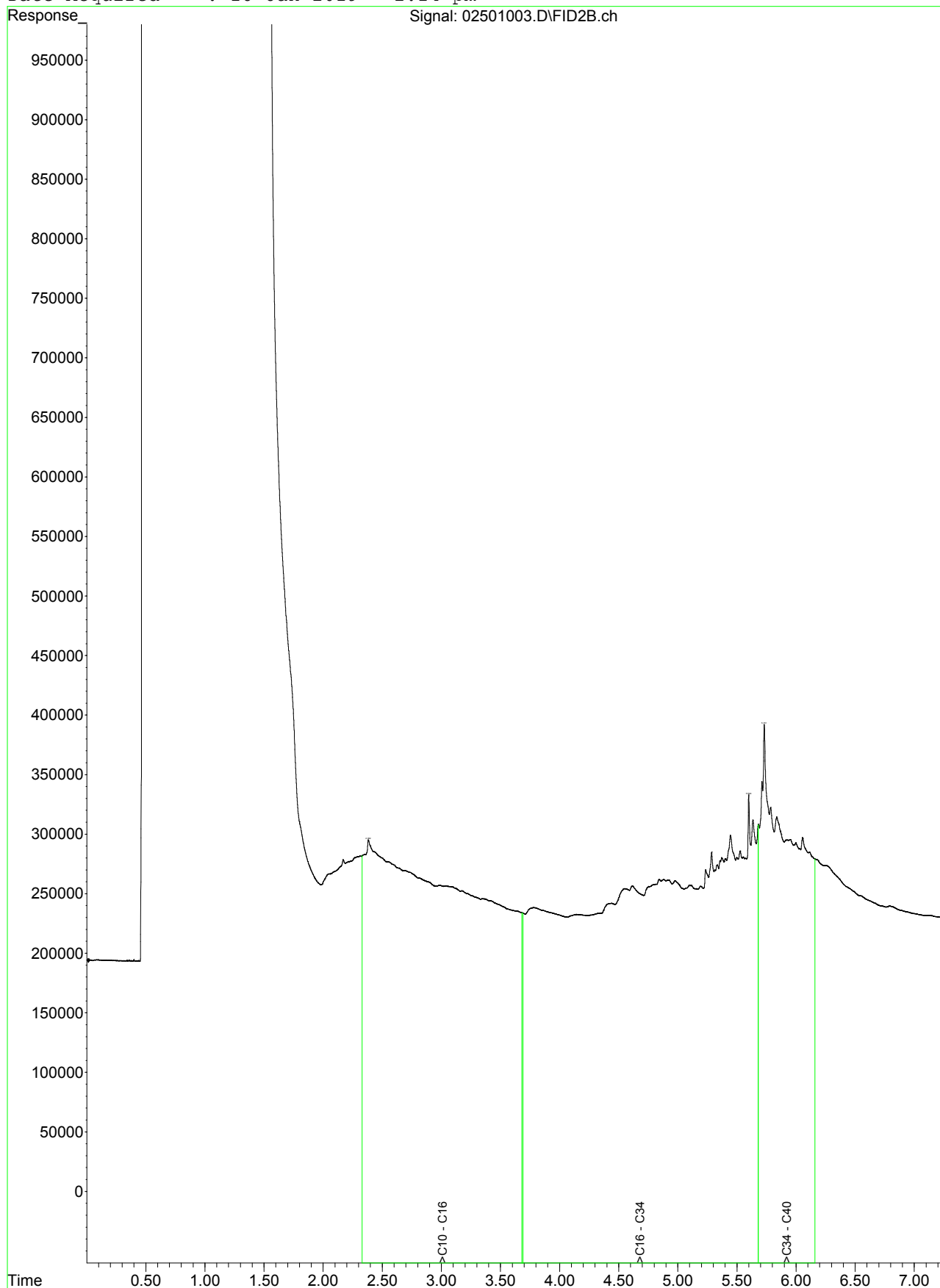


| <i>Preparation Methods</i> | <i>Method</i> | <i>Matrix</i> | <i>Method Descriptions</i> |
|---|---------------|---------------|--|
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

Fraction Scheme : Legacy Fractions
Data File : 02501003.D
Laboratory Number: EM1900336-001
Sample ID : CPT_MW17_110119_0.2
Date Acquired : 18 Jan 2019 2:14 pm



Fraction Scheme : NEPM Fractions
Data File : 02501003.D
Laboratory Number: EM1900336-001
Sample ID : CPT_MW17_110119_0.2
Date Acquired : 18 Jan 2019 2:14 pm



| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: BE/PCH | Destination Laboratory | |
|--|----------------------|---|-------------------|-------------------------|-------------------------------|--|
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GUPP) EBS | | MOBILE: | | |
| PROJECT NUMBER & TASK CODE: 60572634 | | P.O. NO.: | | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | EMAIL REPORT TO: | | |
| COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

 | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)

 | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| SAMPLE INFORMATION (Note: S = Soil, W=Water) | | CONTAINER INFORMATION | | Total bottles | | |
| ALS ID | SAMPLED | MATRIX | DATE | | | |
| 1 | CPT029-BH0-0-0.1 | S | 14/01/19 | | | |
| 2 | CPT229-BH0-0.4-0.5 | S | 14/01/19 | | | |
| 3 | CPT029-BH10-0.9-1.0 | S | 14/01/19 | | | |
| 4 | CPT029-BH10-1.4-1.5 | S | 14/01/19 | | | |
| 5 | CPT029-BH10-1.9-2.0 | S | 14/01/19 | | | |
| 6 | CPT029-BH10-2.4-2.5 | S | 14/01/19 | | | |
| 7 | CPT001-BH109-0-0.1 | S | 14/01/19 | | | |
| 8 | CPT001-BH109-0.5-0.6 | S | " | | | |
| 9 | CPT001-BH109-0.9-1.0 | S | " | | | |
| 10 | CPT001-BH109-1.4-1.5 | S | " | | | |
| 11 | CPT001-BH108-0-0.1 | S | " | | | |
| 12 | CPT001-BH108-0.4-0.5 | S | " | | | |
| 13 | CPT001-BH108-0.9-1.0 | S | " | | | |
| 14 | CPT001-BH108-1.4-1.5 | S | " | | | |
| 15 | CPT001-BH108-1.9-2.0 | S | " | | | |
| 16 | CPT039-BH13-0-0.1 | S | " | | | |
| 17 | CPT039-BH13-0.4-0.5 | S | " | | | |
| 18 | CPT039-BH13-0.9-1.0 | S | " | | | |
| 19 | GCS0-VT0119 | NIS | " | | | |
| Name: BEN/PPPP | | Date: 14/01/19 | Name: [Signature] | Date: 14/01/19 | Name: [Signature] | |
| Of: AECOM | | Time: 5 PM | Time: 5 PM | Time: 5 PM | Time: 5 PM | |
| V = VOC Vol HCl Preserved; VB = VOC Vol Redox Preserved; VS = VOC Vol Butyltin Preserved; AV = Air Transport Unpreserved Vol; AD = Acid Dye Preserved Amber Glass; H = HCl preserved Specimen bottle; SP = Butyltin Preserved Plastic;
F = Formaldehyde Preserved (Glass); Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; BT = Butyltin Bottle; AB = Plastic Bag for Acid Butyltin; SB = Unpreserved Bag.
Water Container Codes: P = Unpreserved Plastic; N = NIBS Preserved Plastic; CAC = Nitro Preserved Plastic; GAC = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Ambient Unpreserved Plastic | | | | | | |

COC Page of

From: [REDACTED]@aeacom.com>
Sent: Tuesday, 15 January 2019 8:41 AM
To: [REDACTED]
Subject: GIJPP EES - eskies couriered without COC on 14 Jan 2019

Hi [REDACTED]

Yesterday eskies were couriered from Hastings for the GIJPP EES to the lab without COCs. Please find attached COCs.

Can you please do me a favour and update the IDs by removing the bottom depth for each sample e.g. change CPT001_BH108_140119_0.0-0.1 to CPT001_BH108_140119_0.0?

Also Please analyse:

1. CPT029_BH10_140119_0.0= IWRG621
- 3 2. CPT029_BH10_140119_0.9= IWRG621
- 7 3. CPT001_BH109_140119_0.0= IWRG621
- 8 4. CPT001_BH109_140119_0.4= IWRG621
- 11 5. CPT001_BH108_140119_0.0= IWRG621
- 12 6. CPT001_BH108_140119_0.4= IWRG621
- 16 7. CPT039_BH13_140119_0.0= IWRG621
- 17 8. CPT039_BH13_140119_0.4= IWRG621
- 2 9. CPT029_BH10_140119_0.4= SPOCAS (EA029)
- 3 10. CPT029_BH10_140119_0.9= SPOCAS (EA029)
- 2 11. CPT001_BH109_140119_0.9= Chromium Suite (EA033)
- 10 12. CPT001_BH109_140119_1.4= Chromium Suite (EA033)
- 12 13. CPT001_BH108_140119_0.4= Chromium Suite (EA033)
- 14 14. CPT001_BH108_140119_1.4= Chromium Suite (EA033)
- 17 15. CPT039_BH13_140119_0.4= Chromium Suite (EA033)
- 26 16. CPT039_BH13_140119_1.4= Chromium Suite (EA033)
- 19 17. QC150_140119= IWRG621
18. QC250_140119= IWRG621 (Triplicate, please forward to Eurofins)
- 28 19. QC350_100119= IWRG621 water equivalent
- 26 20. QC450_100119= TPH(C6-C9)/BTEXN
- 23 21. QC550_100119= TPH(C6-C9)/BTEXN
- 24 22. QC551_100119= TPH(C6-C9)/BTEXN

For the other eskies with COCs, please analyse:

- 27 1. CPT032_BH11_140119_0.2= IWRG621
- 30 2. CPT032_BH11_140119_1.5= IWRG621
- 33 3. CPT036B_BH12_140119_0.2= IWRG621
- 36 4. CPT036B_BH12_140119_1.5= IWRG621
- 28 5. CPT032_BH11_140119_0.5= Chromium Suite (EA033)
- 29 6. CPT032_BH11_140119_1.0= Chromium Suite (EA033)
- 34 7. CPT036B_BH12_140119_0.5= Chromium Suite (EA033)
- 36 8. CPT036B_BH12_140119_1.5= Chromium Suite (EA033)
- 32 9. QC311_100119= IWRG621 water equivalent
- 40 10. QC411_100119= TPH(C6-C9)/BTEXN
- 41 11. QC518_100119= TPH(C6-C9)/BTEXN
- 42 12. QC519_100119= TPH(C6-C9)/BTEXN

At standard TAT. Thanks.

[REDACTED]
Senior Environmental Engineer

[REDACTED]
[REDACTED]@aecom.com

AECOM

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aecom.com

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From: [REDACTED]@aecom.com>
Sent: Wednesday, 16 January 2019 1:23 PM
To: [REDACTED]
Subject: RE: SRN for ALS Workorder : EM1900402 | Overall Description: GIJPP EES

Hi [REDACTED]

Can you please add the following analysis? Thanks.

11 CPT001_BH108_0.0 = PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
12 CPT001_BH108_0.4 = PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
7 CPT001_BH109_0.0 = PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
8 CPT001_BH109_0.5 = PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
25 QC350 = PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
16 QC450 = PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
23 QC550 = PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
1 QC551 = PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)

At Standard TAT. Thanks.

[REDACTED]
Senior Environmental Engineer
[REDACTED]

[REDACTED]@aecom.com

AECOM

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From: angel-no-reply@alsglobal.com [mailto:angel-no-reply@alsglobal.com]
Sent: Tuesday, 15 January 2019 12:49 PM
To: [REDACTED]
Subject: SRN for ALS Workorder : EM1900402 | Overall Description: GIJPP EES



Deliverables for ALS Workorder EM1900402

Project: 60592634

Overall Description: GIJPP EES

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900402

| | |
|--|---|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : GIJPP</p> <p>Sampler : [REDACTED]</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 4</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|--|---|

Dates

| | |
|---|--|
| <p>Date Samples Received : 14-Jan-2019 17:30</p> <p>Client Requested Due : 22-Jan-2019</p> <p>Date : </p> | <p>Issue Date : 15-Jan-2019</p> <p>Scheduled Reporting Date : 22-Jan-2019</p> |
|---|--|

Delivery Details

| | |
|---|--|
| <p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 4</p> <p>Receipt Detail :</p> | <p>Security Seal : Intact.</p> <p>Temperature : 11.7°C - Ice present</p> <p>No. of samples received / analysed : 42 / 29</p> |
|---|--|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale & ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|----------------------------------|--|
| Dissolved Mercury by FIMS : EG035F | | |
| QC311_140119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite A : EG020A-F | | |
| QC311_140119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite B : EG020B-F | | |
| QC311_140119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

| | | |
|---------------|-------------------|---------------------------|
| EM1900402-001 | : [14-Jan-2019] | : CPT029_BH10_140119_0.0 |
| EM1900402-002 | : [14-Jan-2019] | : CPT029_BH10_140119_0.4 |
| EM1900402-003 | : [14-Jan-2019] | : CPT029_BH10_140119_0.9 |
| EM1900402-007 | : [14-Jan-2019] | : CPT001_BH109_140119_0.0 |
| EM1900402-008 | : [14-Jan-2019] | : CPT001_BH109_140119_0.5 |
| EM1900402-009 | : [14-Jan-2019] | : CPT001_BH109_140119_0.9 |
| EM1900402-010 | : [14-Jan-2019] | : CPT001_BH109_140119_1.4 |
| EM1900402-011 | : [14-Jan-2019] | : CPT001_BH108_140119_0.0 |
| EM1900402-012 | : [14-Jan-2019] | : CPT001_BH108_140119_0.4 |
| EM1900402-014 | : [14-Jan-2019] | : CPT001_BH108_140119_1.4 |
| EM1900402-016 | : [14-Jan-2019] | : CPT039_BH13_140119_0.0 |
| EM1900402-017 | : [14-Jan-2019] | : CPT039_BH13_140119_0.4 |
| EM1900402-020 | : [14-Jan-2019] | : CPT039_BH13_140119_1.4 |
| EM1900402-027 | : [14-Jan-2019] | : CPT032_BH11_140119_0.2 |
| EM1900402-028 | : [14-Jan-2019] | : CPT032_BH11_140119_0.5 |
| EM1900402-029 | : [14-Jan-2019] | : CPT032_BH11_140119_1.0 |
| EM1900402-030 | : [14-Jan-2019] | : CPT032_BH11_140119_1.5 |
| EM1900402-033 | : [14-Jan-2019] | : CPT036B_BH12_140119_0.2 |
| EM1900402-034 | : [14-Jan-2019] | : CPT036B_BH12_140119_0.5 |
| EM1900402-036 | : [14-Jan-2019] | : CPT036B_BH12_140119_1.5 |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
WRG 621 |
|----------------------|-----------------------------|-------------------------|---|------------------------|--|--------------------------------------|------------------------|
| EM1900402-001 | 14-Jan-2019 00:00 | CPT029_BH10_140119_0... | | | | ✓ | ✓ |
| EM1900402-002 | 14-Jan-2019 00:00 | CPT029_BH10_140119_0... | | ✓ | | | |
| EM1900402-003 | 14-Jan-2019 00:00 | CPT029_BH10_140119_0... | | ✓ | | ✓ | ✓ |
| EM1900402-004 | 14-Jan-2019 00:00 | CPT029_BH10_140119_1... | ✓ | | | | |
| EM1900402-005 | 14-Jan-2019 00:00 | CPT029_BH10_140119_1... | ✓ | | | | |
| EM1900402-006 | 14-Jan-2019 00:00 | CPT029_BH10_140119_2... | ✓ | | | | |
| EM1900402-007 | 14-Jan-2019 00:00 | CPT001_BH109_140119_... | | | | ✓ | ✓ |
| EM1900402-008 | 14-Jan-2019 00:00 | CPT001_BH109_140119_... | | | | ✓ | ✓ |
| EM1900402-009 | 14-Jan-2019 00:00 | CPT001_BH109_140119_... | | | ✓ | | |
| EM1900402-010 | 14-Jan-2019 00:00 | CPT001_BH109_140119_... | | | ✓ | | |
| EM1900402-011 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | | | | ✓ | ✓ |
| EM1900402-012 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | | | ✓ | ✓ | ✓ |



| | | | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
|---------------|-------------------|-------------------------|---|------------------------|--|--------------------------------------|-------------------------|
| EM1900402-013 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | ✓ | | | | |
| EM1900402-014 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | | | ✓ | | |
| EM1900402-015 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | ✓ | | | | |
| EM1900402-016 | 14-Jan-2019 00:00 | CPT039_BH13_140119_0... | | | | ✓ | ✓ |
| EM1900402-017 | 14-Jan-2019 00:00 | CPT039_BH13_140119_0... | | | ✓ | ✓ | ✓ |
| EM1900402-018 | 14-Jan-2019 00:00 | CPT039_BH13_140119_0... | ✓ | | | | |
| EM1900402-019 | 14-Jan-2019 00:00 | QC150_140119 | | | | ✓ | ✓ |
| EM1900402-020 | 14-Jan-2019 00:00 | CPT039_BH13_140119_1... | | | ✓ | | |
| EM1900402-021 | 14-Jan-2019 00:00 | CPT039_BH13_140119_1... | ✓ | | | | |
| EM1900402-022 | 14-Jan-2019 00:00 | CPT039_BH13_140119_2... | ✓ | | | | |
| EM1900402-027 | 14-Jan-2019 00:00 | CPT032_BH11_140119_0... | | | | ✓ | ✓ |
| EM1900402-028 | 14-Jan-2019 00:00 | CPT032_BH11_140119_0... | | | ✓ | | |
| EM1900402-029 | 14-Jan-2019 00:00 | CPT032_BH11_140119_1... | | | ✓ | | |
| EM1900402-030 | 14-Jan-2019 00:00 | CPT032_BH11_140119_1... | | | | ✓ | ✓ |
| EM1900402-031 | 14-Jan-2019 00:00 | CPT032_BH11_140119_2... | ✓ | | | | |
| EM1900402-032 | 14-Jan-2019 00:00 | CPT032_BH11_140119_2... | ✓ | | | | |
| EM1900402-033 | 14-Jan-2019 00:00 | CPT036B_BH12_140119_... | | | | ✓ | ✓ |
| EM1900402-034 | 14-Jan-2019 00:00 | CPT036B_BH12_140119_... | | | ✓ | | |
| EM1900402-035 | 14-Jan-2019 00:00 | CPT036B_BH12_140119_... | ✓ | | | | |
| EM1900402-036 | 14-Jan-2019 00:00 | CPT036B_BH12_140119_... | | | ✓ | ✓ | ✓ |
| EM1900402-037 | 14-Jan-2019 00:00 | CPT036B_BH12_140119_... | ✓ | | | | |
| EM1900402-038 | 14-Jan-2019 00:00 | CPT038C_BH12_140119_... | ✓ | | | | |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------------------|
| EM1900402-023 | 14-Jan-2019 00:00 | QC550_140119 | | ✓ |
| EM1900402-024 | 14-Jan-2019 00:00 | QC551_140119 | | ✓ |
| EM1900402-025 | 14-Jan-2019 00:00 | QC350_140119 | ✓ | |
| EM1900402-026 | 14-Jan-2019 00:00 | QC450_140119 | | ✓ |
| EM1900402-039 | 14-Jan-2019 00:00 | QC311_140119 | ✓ | |
| EM1900402-040 | 14-Jan-2019 00:00 | QC411_140119 | | ✓ |
| EM1900402-041 | 14-Jan-2019 00:00 | QC518_140119 | | ✓ |



| | | | | |
|---------------|-------------------|--------------|--|---|
| EM1900402-042 | 14-Jan-2019 00:00 | QC519_140119 | WATER - 448.3 Water | |
| | | | VIC EPA IWRG621 - Water Equivalent Suite | |
| | | | WATER - W-18 | |
| | | | TRH(C6 - C9)/BTEXN | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| □ □ □
Client Sample ID(s) | Container | Due for
extraction | Due for
analysis | Samples Received | | Instructions Received | |
|------------------------------|--------------------------------|-----------------------|---------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| QC311_140119 | Clear Plastic Bottle - Natural | ---- | 14-Jan-2019 | 14-Jan-2019 | ✓ | 15-Jan-2019 | ✗ |
| QC350_140119 | Clear Plastic Bottle - Natural | ---- | 14-Jan-2019 | 14-Jan-2019 | ✓ | 15-Jan-2019 | ✗ |

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email

AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

Email

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@aecom.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900402

| | |
|--|---|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : GIJPP</p> <p>Sampler : BE/PH/SM</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 4</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|--|---|

Dates

| | |
|---|--|
| <p>Date Samples Received : 14-Jan-2019 17:30</p> <p>Client Requested Due : 23-Jan-2019</p> <p>Date : </p> | <p>Issue Date : 16-Jan-2019</p> <p>Scheduled Reporting Date : 23-Jan-2019</p> |
|---|--|

Delivery Details

| | |
|---|--|
| <p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 4</p> <p>Receipt Detail :</p> | <p>Security Seal : Intact.</p> <p>Temperature : 11.7°C - Ice present</p> <p>No. of samples received / analysed : 42 / 29</p> |
|---|--|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Additional analysis instructions received 13:23, 16/1/19.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale & ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|----------------------------------|--|
| Dissolved Mercury by FIMS : EG035F | | |
| QC311_140119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite A : EG020A-F | | |
| QC311_140119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite B : EG020B-F | | |
| QC311_140119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

| | | |
|---------------|-------------------|---------------------------|
| EM1900402-001 | : [14-Jan-2019] | : CPT029_BH10_140119_0.0 |
| EM1900402-002 | : [14-Jan-2019] | : CPT029_BH10_140119_0.4 |
| EM1900402-003 | : [14-Jan-2019] | : CPT029_BH10_140119_0.9 |
| EM1900402-007 | : [14-Jan-2019] | : CPT001_BH109_140119_0.0 |
| EM1900402-008 | : [14-Jan-2019] | : CPT001_BH109_140119_0.5 |
| EM1900402-009 | : [14-Jan-2019] | : CPT001_BH109_140119_0.9 |
| EM1900402-010 | : [14-Jan-2019] | : CPT001_BH109_140119_1.4 |
| EM1900402-011 | : [14-Jan-2019] | : CPT001_BH108_140119_0.0 |
| EM1900402-012 | : [14-Jan-2019] | : CPT001_BH108_140119_0.4 |
| EM1900402-014 | : [14-Jan-2019] | : CPT001_BH108_140119_1.4 |
| EM1900402-016 | : [14-Jan-2019] | : CPT039_BH13_140119_0.0 |
| EM1900402-017 | : [14-Jan-2019] | : CPT039_BH13_140119_0.4 |
| EM1900402-020 | : [14-Jan-2019] | : CPT039_BH13_140119_1.4 |
| EM1900402-027 | : [14-Jan-2019] | : CPT032_BH11_140119_0.2 |
| EM1900402-028 | : [14-Jan-2019] | : CPT032_BH11_140119_0.5 |
| EM1900402-029 | : [14-Jan-2019] | : CPT032_BH11_140119_1.0 |
| EM1900402-030 | : [14-Jan-2019] | : CPT032_BH11_140119_1.5 |
| EM1900402-033 | : [14-Jan-2019] | : CPT036B_BH12_140119_0.2 |
| EM1900402-034 | : [14-Jan-2019] | : CPT036B_BH12_140119_0.5 |
| EM1900402-036 | : [14-Jan-2019] | : CPT036B_BH12_140119_1.5 |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - EP231X (solids)
PFAS - Full Suite (28 analytes) | SOIL - P-16
WRG 621 |
|----------------------|-----------------------------|-------------------------|---|------------------------|--|--------------------------------------|---|------------------------|
| EM1900402-001 | 14-Jan-2019 00:00 | CPT029_BH10_140119_0... | | | | ✓ | | ✓ |
| EM1900402-002 | 14-Jan-2019 00:00 | CPT029_BH10_140119_0... | | ✓ | | | | |
| EM1900402-003 | 14-Jan-2019 00:00 | CPT029_BH10_140119_0... | | ✓ | | ✓ | | ✓ |
| EM1900402-004 | 14-Jan-2019 00:00 | CPT029_BH10_140119_1... | ✓ | | | | | |
| EM1900402-005 | 14-Jan-2019 00:00 | CPT029_BH10_140119_1... | ✓ | | | | | |
| EM1900402-006 | 14-Jan-2019 00:00 | CPT029_BH10_140119_2... | ✓ | | | | | |
| EM1900402-007 | 14-Jan-2019 00:00 | CPT001_BH109_140119_... | | | | ✓ | ✓ | ✓ |
| EM1900402-008 | 14-Jan-2019 00:00 | CPT001_BH109_140119_... | | | | ✓ | ✓ | ✓ |
| EM1900402-009 | 14-Jan-2019 00:00 | CPT001_BH109_140119_... | | | ✓ | | | |
| EM1900402-010 | 14-Jan-2019 00:00 | CPT001_BH109_140119_... | | | ✓ | | | |
| EM1900402-011 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | | | | ✓ | ✓ | ✓ |
| EM1900402-012 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | | | ✓ | ✓ | ✓ | ✓ |



| | | | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - EP231X (solids)
PFAS - Full Suite (28 analytes) | SOIL - P-16
WRG 621 |
|---------------|-------------------|-------------------------|---|------------------------|--|--------------------------------------|---|------------------------|
| EM1900402-013 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | ✓ | | | | | |
| EM1900402-014 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | | | ✓ | | | |
| EM1900402-015 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | ✓ | | | | | |
| EM1900402-016 | 14-Jan-2019 00:00 | CPT039_BH13_140119_0... | | | | ✓ | | ✓ |
| EM1900402-017 | 14-Jan-2019 00:00 | CPT039_BH13_140119_0... | | | ✓ | ✓ | | ✓ |
| EM1900402-018 | 14-Jan-2019 00:00 | CPT039_BH13_140119_0... | ✓ | | | | | |
| EM1900402-019 | 14-Jan-2019 00:00 | QC150_140119 | | | | ✓ | | ✓ |
| EM1900402-020 | 14-Jan-2019 00:00 | CPT039_BH13_140119_1... | | | ✓ | | | |
| EM1900402-021 | 14-Jan-2019 00:00 | CPT039_BH13_140119_1... | ✓ | | | | | |
| EM1900402-022 | 14-Jan-2019 00:00 | CPT039_BH13_140119_2... | ✓ | | | | | |
| EM1900402-027 | 14-Jan-2019 00:00 | CPT032_BH11_140119_0... | | | | ✓ | | ✓ |
| EM1900402-028 | 14-Jan-2019 00:00 | CPT032_BH11_140119_0... | | | ✓ | | | |
| EM1900402-029 | 14-Jan-2019 00:00 | CPT032_BH11_140119_1... | | | ✓ | | | |
| EM1900402-030 | 14-Jan-2019 00:00 | CPT032_BH11_140119_1... | | | | ✓ | | ✓ |
| EM1900402-031 | 14-Jan-2019 00:00 | CPT032_BH11_140119_2... | ✓ | | | | | |
| EM1900402-032 | 14-Jan-2019 00:00 | CPT032_BH11_140119_2... | ✓ | | | | | |
| EM1900402-033 | 14-Jan-2019 00:00 | CPT036B_BH12_140119_... | | | | ✓ | | ✓ |
| EM1900402-034 | 14-Jan-2019 00:00 | CPT036B_BH12_140119_... | | | ✓ | | | |
| EM1900402-035 | 14-Jan-2019 00:00 | CPT036B_BH12_140119_... | ✓ | | | | | |
| EM1900402-036 | 14-Jan-2019 00:00 | CPT036B_BH12_140119_... | | | ✓ | ✓ | | ✓ |
| EM1900402-037 | 14-Jan-2019 00:00 | CPT036B_BH12_140119_... | ✓ | | | | | |
| EM1900402-038 | 14-Jan-2019 00:00 | CPT038C_BH12_140119_... | ✓ | | | | | |

Matrix: **WATER**

Laboratory sample ID Client sampling date / time Client sample ID

| | | | |
|---------------|-------------------|--------------|---|
| EM1900402-023 | 14-Jan-2019 00:00 | QC550_140119 | ✓ |
| EM1900402-024 | 14-Jan-2019 00:00 | QC551_140119 | ✓ |
| EM1900402-026 | 14-Jan-2019 00:00 | QC450_140119 | ✓ |
| EM1900402-040 | 14-Jan-2019 00:00 | QC411_140119 | ✓ |
| EM1900402-041 | 14-Jan-2019 00:00 | QC518_140119 | ✓ |
| EM1900402-042 | 14-Jan-2019 00:00 | QC519_140119 | ✓ |

WATER - W-18
TRH(C6 - C9)/BTEXN



Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water VIC EPA IWRG621 - Water Equivalent Suite | WATER - EP231X-LL PFAS - Full Suite Low Level (29 analytes) |
|----------------------|-----------------------------|------------------|--|---|
| EM1900402-025 | 14-Jan-2019 00:00 | QC350_140119 | ✓ | ✓ |
| EM1900402-039 | 14-Jan-2019 00:00 | QC311_140119 | ✓ | |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

| ☐☐☐
Client Sample ID(s) | Container | Due for
extraction | Due for
analysis | Samples Received | | Instructions Received | |
|----------------------------|--------------------------------|-----------------------|---------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| QC311_140119 | Clear Plastic Bottle - Natural | ---- | 14-Jan-2019 | 14-Jan-2019 | ✓ | 15-Jan-2019 | ✗ |
| QC350_140119 | Clear Plastic Bottle - Natural | ---- | 14-Jan-2019 | 14-Jan-2019 | ✓ | 15-Jan-2019 | ✗ |

Requested Deliverables

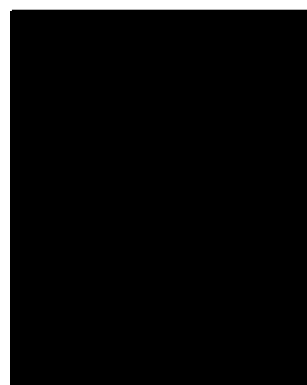
ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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CERTIFICATE OF ANALYSIS

Work Order : **EM1900402**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP
Quote number : EN/096/18
No. of samples received : 42
No. of samples analysed : 29

Page : 1 of 47
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 14-Jan-2019 17:30
Date Analysis Commenced : 16-Jan-2019
Issue Date : 24-Jan-2019 13:31



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|----------------------------------|---|
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | | Sydney Organics, Smithfield, NSW |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- EP075: 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m³ in-situ soil, multiply reported results x wet bulk density of soil in t/m³.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | | | | |
|---|------------|-------|-------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| | | | | CPT029_BH10_14011
9_0.0 | CPT029_BH10_14011
9_0.4 | CPT029_BH10_14011
9_0.9 | CPT001_BH109_1401
19_0.0 | CPT001_BH109_1401
19_0.5 |
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1900402-001 | EM1900402-002 | EM1900402-003 | EM1900402-007 | EM1900402-008 |
| | | | | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | 5.6 | ---- | 6.9 | 7.0 | 7.4 |
| EA029-A: pH Measurements | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | ---- | 4.8 | 6.2 | ---- | ---- |
| pH OX (23B) | ---- | 0.1 | pH Unit | ---- | 4.0 | 6.2 | ---- | ---- |
| EA029-B: Acidity Trail | | | | | | | | |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | ---- | 23 | 2 | ---- | ---- |
| Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | ---- | 40 | 7 | ---- | ---- |
| Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | ---- | 16 | 4 | ---- | ---- |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.020 | % pyrite S | ---- | 0.037 | <0.020 | ---- | ---- |
| sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.020 | % pyrite S | ---- | 0.064 | <0.020 | ---- | ---- |
| sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.020 | % pyrite S | ---- | 0.026 | <0.020 | ---- | ---- |
| EA029-C: Sulfur Trail | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.020 | % S | ---- | <0.020 | <0.020 | ---- | ---- |
| Peroxide Sulfur (23De) | ---- | 0.020 | % S | ---- | 0.024 | <0.020 | ---- | ---- |
| Peroxide Oxidisable Sulfur (23E) | ---- | 0.020 | % S | ---- | 0.024 | <0.020 | ---- | ---- |
| acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | ---- | 15 | <10 | ---- | ---- |
| EA029-D: Calcium Values | | | | | | | | |
| KCl Extractable Calcium (23Vh) | ---- | 0.020 | % Ca | ---- | 0.167 | 0.205 | ---- | ---- |
| Peroxide Calcium (23Wh) | ---- | 0.020 | % Ca | ---- | 0.168 | 0.207 | ---- | ---- |
| Acid Reacted Calcium (23X) | ---- | 0.020 | % Ca | ---- | <0.020 | <0.020 | ---- | ---- |
| acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | ---- | <10 | <10 | ---- | ---- |
| sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.020 | % S | ---- | <0.020 | <0.020 | ---- | ---- |
| EA029-E: Magnesium Values | | | | | | | | |
| KCl Extractable Magnesium (23Sm) | ---- | 0.020 | % Mg | ---- | 0.096 | 0.133 | ---- | ---- |
| Peroxide Magnesium (23Tm) | ---- | 0.020 | % Mg | ---- | 0.096 | 0.134 | ---- | ---- |
| Acid Reacted Magnesium (23U) | ---- | 0.020 | % Mg | ---- | <0.020 | <0.020 | ---- | ---- |
| Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | ---- | <10 | <10 | ---- | ---- |
| sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.020 | % S | ---- | <0.020 | <0.020 | ---- | ---- |
| EA029-H: Acid Base Accounting | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | ---- | 1.5 | 1.5 | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | ---- | 0.06 | <0.02 | ---- | ---- |



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| | | | | | | | | | |
|--|-------------------|------|-------------|------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT029_BH10_14011
9_0.0 | CPT029_BH10_14011
9_0.4 | CPT029_BH10_14011
9_0.9 | CPT001_BH109_1401
19_0.0 | CPT001_BH109_1401
19_0.5 |
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-001 | EM1900402-002 | EM1900402-003 | EM1900402-007 | EM1900402-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA029-H: Acid Base Accounting - Continued | | | | | | | | | |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | 38 | <10 | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | 3 | <1 | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | 0.06 | <0.02 | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | 38 | <10 | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | 3 | <1 | ---- | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 11.5 | ---- | 23.7 | 5.5 | 13.7 | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | ---- | <5 | 16 | 20 | |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | ---- | <1 | <1 | <1 | |
| Copper | 7440-50-8 | 5 | mg/kg | <5 | ---- | <5 | 7 | <5 | |
| Lead | 7439-92-1 | 5 | mg/kg | 15 | ---- | 12 | 19 | <5 | |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | ---- | <2 | <2 | <2 | |
| Nickel | 7440-02-0 | 2 | mg/kg | 6 | ---- | 6 | 6 | 6 | |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | ---- | <5 | <5 | <5 | |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | ---- | <2 | <2 | <2 | |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | ---- | <5 | <5 | <5 | |
| Zinc | 7440-66-6 | 5 | mg/kg | 6 | ---- | <5 | 140 | 7 | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | ---- | <0.1 | <0.1 | <0.1 | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | 1 | ---- | <1 | <1 | <1 | |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | 160 | ---- | 180 | 70 | 120 | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | ---- | <0.1 | 0.1 | <0.1 | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | ---- | <0.2 | <0.2 | <0.2 | |
| Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT029_BH10_14011
9_0.0 | CPT029_BH10_14011
9_0.4 | CPT029_BH10_14011
9_0.9 | CPT001_BH109_1401
19_0.0 | CPT001_BH109_1401
19_0.5 |
|---|------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-001 | EM1900402-002 | EM1900402-003 | EM1900402-007 | EM1900402-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP074A: Monocyclic Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | <0.4 | <0.4 | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | ---- | <0.04 | <0.04 | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT029_BH10_14011
9_0.0 | CPT029_BH10_14011
9_0.4 | CPT029_BH10_14011
9_0.9 | CPT001_BH109_1401
19_0.0 | CPT001_BH109_1401
19_0.5 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-001 | EM1900402-002 | EM1900402-003 | EM1900402-007 | EM1900402-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | ---- | <5 | <5 | <5 |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | ---- | <5 | <5 | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | ---- | <5 | <5 | <5 |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | 1.4 | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | 1.3 | <0.5 |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | 0.6 | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | 0.6 | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | 1.3 | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | 0.6 | <0.5 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |

Client sample ID

| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT029_BH10_14011
9_0.0 | CPT029_BH10_14011
9_0.4 | CPT029_BH10_14011
9_0.9 | CPT001_BH109_1401
19_0.0 | CPT001_BH109_1401
19_0.5 |
|---|----------------------|------|-------|-------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | |
| Compound | CAS Number | LOR | Unit | EM1900402-001 | EM1900402-002 | EM1900402-003 | EM1900402-007 | EM1900402-008 | |
| | | | | Result | Result | Result | Result | Result | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | <0.5 | ---- | <0.5 | 5.8 | <0.5 | |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | <0.5 | ---- | <0.5 | 0.8 | <0.5 | |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | 0.6 | ---- | 0.6 | 1.1 | 0.6 | |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | 1.2 | ---- | 1.2 | 1.4 | 1.2 | |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | <0.05 | |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | <0.05 | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | <0.05 | |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | <0.05 | |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | | | | |
|---|-------------|--------|-------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | CPT029_BH10_14011
9_0.0 | CPT029_BH10_14011
9_0.4 | CPT029_BH10_14011
9_0.9 | CPT001_BH109_1401
19_0.0 | CPT001_BH109_1401
19_0.5 |
| Compound | | | | CAS Number | LOR | Unit | | |
| | | | | | | | | |
| | | | | EM1900402-001 | EM1900402-002 | EM1900402-003 | EM1900402-007 | EM1900402-008 |
| | | | | Result | Result | Result | Result | Result |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | <10 | <10 | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | <10 | <10 | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | 120 | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | 120 | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | 140 | ---- | <100 | 170 | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | 140 | ---- | <50 | 170 | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | <10 | <10 | <10 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | ---- | ---- | ---- | <0.0002 | <0.0002 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | ---- | ---- | ---- | <0.0002 | <0.0002 |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | ---- | ---- | ---- | <0.0002 | <0.0002 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | ---- | ---- | ---- | <0.0002 | <0.0002 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | ---- | ---- | ---- | 0.0005 | <0.0002 |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | ---- | ---- | ---- | <0.0002 | <0.0002 |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | ---- | ---- | ---- | <0.001 | <0.001 |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | ---- | ---- | ---- | <0.0002 | <0.0002 |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | ---- | ---- | ---- | <0.0002 | <0.0002 |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | ---- | ---- | ---- | <0.0002 | <0.0002 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | ---- | ---- | ---- | <0.0002 | <0.0002 |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | ---- | ---- | ---- | <0.0002 | <0.0002 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT029_BH10_14011
9_0.0 | CPT029_BH10_14011
9_0.4 | CPT029_BH10_14011
9_0.9 | CPT001_BH109_1401
19_0.0 | CPT001_BH109_1401
19_0.5 |
|--|-------------|--------|-------|------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-001 | EM1900402-002 | EM1900402-003 | EM1900402-007 | EM1900402-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP231B: Perfluoroalkyl Carboxylic Acids - Continued | | | | | | | | | |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | ---- | ---- | ---- | ---- | <0.0002 | <0.0002 |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | ---- | ---- | ---- | ---- | <0.0002 | <0.0002 |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | ---- | ---- | ---- | ---- | <0.0002 | <0.0002 |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | ---- | ---- | ---- | ---- | <0.0002 | <0.0002 |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | ---- | ---- | ---- | ---- | <0.0005 | <0.0005 |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | ---- | ---- | ---- | ---- | <0.0002 | <0.0002 |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | ---- | ---- | ---- | ---- | <0.0005 | <0.0005 |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | ---- | ---- | ---- | ---- | <0.0005 | <0.0005 |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | ---- | ---- | ---- | ---- | <0.0005 | <0.0005 |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | ---- | ---- | ---- | ---- | <0.0005 | <0.0005 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | ---- | ---- | ---- | ---- | <0.0002 | <0.0002 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | ---- | ---- | ---- | ---- | <0.0002 | <0.0002 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | ---- | ---- | ---- | ---- | <0.0005 | <0.0005 |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | ---- | ---- | ---- | ---- | <0.0005 | <0.0005 |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | ---- | ---- | ---- | ---- | <0.0005 | <0.0005 |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | ---- | ---- | ---- | ---- | <0.0005 | <0.0005 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT029_BH10_14011
9_0.0 | CPT029_BH10_14011
9_0.4 | CPT029_BH10_14011
9_0.9 | CPT001_BH109_1401
19_0.0 | CPT001_BH109_1401
19_0.5 |
|---|--------------------|--------|-------|------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-001 | EM1900402-002 | EM1900402-003 | EM1900402-007 | EM1900402-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.0002 | mg/kg | | ---- | ---- | ---- | 0.0005 | <0.0002 |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.0002 | mg/kg | | ---- | ---- | ---- | 0.0005 | <0.0002 |
| Sum of PFAS (WA DER List) | ---- | 0.0002 | mg/kg | | ---- | ---- | ---- | 0.0005 | <0.0002 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 115 | ---- | 110 | 110 | 117 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 76.5 | ---- | 74.2 | 80.8 | 79.1 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 79.0 | ---- | 86.7 | 79.2 | 85.5 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 86.7 | ---- | 83.9 | 73.3 | 87.4 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 118 | ---- | 118 | 134 | 118 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 97.7 | ---- | 103 | 98.1 | 109 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | 112 | ---- | 88.2 | 92.9 | 101 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | 116 | ---- | 112 | 106 | 123 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | 85.4 | ---- | 114 | 106 | 115 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | 124 | ---- | 119 | 108 | 121 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | 118 | ---- | 121 | 120 | 125 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | 114 | ---- | 92.0 | 100 | 98.9 |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | | ---- | ---- | ---- | 89.5 | 87.0 |
| 13C8-PFOA | ---- | 0.0002 | % | | ---- | ---- | ---- | 63.5 | 66.0 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | | | | |
|--|-----------|-------|-------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | CPT001_BH109_1401
19_0.9 | CPT001_BH109_1401
19_1.4 | CPT001_BH108_1401
19_0.0 | CPT001_BH108_1401
19_0.4 | CPT001_BH108_1401
19_1.4 |
| Compound | | | | CAS Number | LOR | Unit | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | EM1900402-009 | EM1900402-010 | EM1900402-011 | EM1900402-012 | EM1900402-014 |
| pH (CaCl2) | ---- | 0.1 | pH Unit | ---- | ---- | 5.8 | 4.5 | ---- |
| EA033-A: Actual Acidity | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 6.8 | 6.8 | ---- | 5.0 | 4.9 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | ---- | 14 | 14 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | ---- | 0.02 | 0.02 |
| EA033-B: Potential Acidity | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | <0.005 | ---- | 0.008 | 0.014 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | ---- | <10 | <10 |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | 0.31 | 0.52 | ---- | ---- | ---- |
| acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | 62 | 104 | ---- | ---- | ---- |
| sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | 0.10 | 0.17 | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | ---- | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | <0.02 | ---- | 0.03 | 0.04 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | <10 | ---- | 19 | 23 |
| Liming Rate | ---- | 1 | kg CaCO3/t | <1 | <1 | ---- | 1 | 2 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | <0.02 | ---- | 0.03 | 0.04 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | <10 | ---- | 19 | 23 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | <1 | ---- | 1 | 2 |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | ---- | ---- | 1.7 | 8.4 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | ---- | ---- | 8 | 49 | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | ---- | ---- | 9 | <5 | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | ---- | ---- | 17 | 8 | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | ---- | ---- | <2 | 4 | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | ---- | ---- | 4 | 6 | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | ---- | ---- | <5 | <5 | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | ---- | ---- | <2 | <2 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH109_1401
19_0.9 | CPT001_BH109_1401
19_1.4 | CPT001_BH108_1401
19_0.0 | CPT001_BH108_1401
19_0.4 | CPT001_BH108_1401
19_1.4 |
|---|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-009 | EM1900402-010 | EM1900402-011 | EM1900402-012 | EM1900402-014 |
| | | | | Result | Result | Result | Result | Result | Result |
| EG005T: Total Metals by ICP-AES - Continued | | | | | | | | | |
| Tin | 7440-31-5 | 5 | mg/kg | ---- | ---- | ---- | <5 | <5 | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | ---- | ---- | ---- | 507 | 38 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | ---- | ---- | ---- | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | ---- | ---- | ---- | <1 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | ---- | ---- | ---- | 70 | 60 | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | ---- | ---- | ---- | 0.1 | <0.1 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | ---- | ---- | ---- | <0.2 | <0.2 | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | ---- | ---- | ---- | <0.2 | <0.2 | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | ---- | ---- | ---- | <1 | <1 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | ---- | ---- | ---- | <0.02 | <0.02 | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | ---- | ---- | ---- | <0.01 | <0.01 | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | ---- | ---- | ---- | <0.4 | <0.4 | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | ---- | ---- | ---- | <0.02 | <0.02 | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | ---- | ---- | ---- | <0.01 | <0.01 | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | ---- | ---- | ---- | <0.02 | <0.02 | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | ---- | ---- | ---- | <0.01 | <0.01 | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | ---- | ---- | ---- | <0.01 | <0.01 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH109_1401
19_0.9 | CPT001_BH109_1401
19_1.4 | CPT001_BH108_1401
19_0.0 | CPT001_BH108_1401
19_0.4 | CPT001_BH108_1401
19_1.4 |
|---|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-009 | EM1900402-010 | EM1900402-011 | EM1900402-012 | EM1900402-014 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | ---- | ---- | <0.02 | <0.02 | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | ---- | ---- | <0.02 | <0.02 | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | ---- | ---- | <0.04 | <0.04 | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | ---- | ---- | <0.02 | <0.02 | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | ---- | ---- | <0.01 | <0.01 | ---- | ---- |
| 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | ---- | ---- | <0.02 | <0.02 | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | ---- | ---- | <0.02 | <0.02 | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | ---- | ---- | <0.02 | <0.02 | ---- | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | ---- | ---- | <0.02 | <0.02 | ---- | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | ---- | ---- | <0.02 | <0.02 | ---- | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | ---- | ---- | <0.01 | <0.01 | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | ---- | <0.01 | <0.01 | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | ---- | <0.01 | <0.01 | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | ---- | ---- | <0.05 | <0.05 | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | ---- | ---- | <0.05 | <0.05 | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | ---- | ---- | <0.05 | <0.05 | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | ---- | ---- | <0.2 | <0.2 | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | ---- | ---- | <5 | <5 | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | ---- | ---- | <5 | <5 | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | ---- | ---- | <5 | <5 | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH109_1401
19_0.9 | CPT001_BH109_1401
19_1.4 | CPT001_BH108_1401
19_0.0 | CPT001_BH108_1401
19_0.4 | CPT001_BH108_1401
19_1.4 |
|---|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-009 | EM1900402-010 | EM1900402-011 | EM1900402-012 | EM1900402-014 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds (Non-halogenated) - Continued | | | | | | | | | |
| Dinoseb | 88-85-7 | 5 | mg/kg | | ---- | ---- | <5 | <5 | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | ---- | ---- | <5 | <5 | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | ---- | ---- | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | ---- | ---- | <0.5 | <0.5 | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | ---- | ---- | 5.6 | <0.5 | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | ---- | ---- | <0.5 | <0.5 | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | ---- | ---- | 3.6 | <0.5 | ---- |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | ---- | ---- | 10.3 | <0.5 | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | ---- | ---- | 1.6 | <0.5 | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | ---- | ---- | 20.3 | <0.5 | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | ---- | ---- | 17.3 | <0.5 | ---- |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | ---- | ---- | 8.2 | <0.5 | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | ---- | ---- | 9.8 | <0.5 | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | ---- | ---- | 19.7 | <0.5 | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | ---- | ---- | 9.2 | <0.5 | ---- |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 0.5 | mg/kg | | ---- | ---- | 3.4 | <0.5 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | | ---- | ---- | 1.0 | <0.5 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | | ---- | ---- | 3.9 | <0.5 | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | ---- | ---- | 114 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | ---- | ---- | 13.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | ---- | ---- | 13.5 | 0.6 | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | ---- | ---- | 13.5 | 1.2 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | ---- | ---- | <0.03 | <0.03 | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | ---- | ---- | <0.03 | <0.03 | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | ---- | ---- | <0.03 | <0.03 | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | ---- | ---- | <0.03 | <0.03 | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | ---- | ---- | <0.03 | <0.03 | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | ---- | ---- | <0.03 | <0.03 | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | ---- | ---- | <0.03 | <0.03 | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | ---- | ---- | <0.03 | <0.03 | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | ---- | ---- | <0.03 | <0.03 | ---- |

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| | | | | | | | | |
|--|-------------------------|------|-------|------|------|-------|-------|------|
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | ---- | ---- | <0.05 | <0.05 | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | ---- | ---- | <0.05 | <0.05 | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | ---- | ---- | <0.05 | <0.05 | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-29-3 | 0.05 | mg/kg | ---- | ---- | <0.05 | <0.05 | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- |

| | | | | | | | | |
|----------------------------|--------|-----|-------|------|------|-----|------|------|
| C6 - C9 Fraction | ---- | 10 | mg/kg | ---- | ---- | <10 | <10 | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | ---- | ---- | <50 | <50 | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | ---- | ---- | <10 | <10 | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | ---- | ---- | 270 | <100 | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | ---- | ---- | 130 | <100 | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | ---- | ---- | 400 | <50 | ---- |

| | | | | | | | | |
|--|-------------|-----|-------|------|------|------------|------|------|
| >C10 - C16 Fraction | ---- | 50 | mg/kg | ---- | ---- | <50 | <50 | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | ---- | ---- | 340 | <100 | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | ---- | ---- | <100 | <100 | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | ---- | ---- | 340 | <50 | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | ---- | ---- | <50 | <50 | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | ---- | ---- | <10 | <10 | ---- |

EP231A: Perfluoroalkyl Sulfonic Acids



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT001_BH109_1401
19_0.9 | CPT001_BH109_1401
19_1.4 | CPT001_BH108_1401
19_0.0 | CPT001_BH108_1401
19_0.4 | CPT001_BH108_1401
19_1.4 |
|--|------------|--------|-------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1900402-009 | EM1900402-010 | EM1900402-011 | EM1900402-012 | EM1900402-014 |
| | | | | Result | Result | Result | Result | Result |
| EP231A: Perfluoroalkyl Sulfonic Acids - Continued | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | ---- | ---- | 0.0008 | <0.0002 | ---- |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | ---- | ---- | <0.001 | <0.001 | ---- |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | ---- | ---- | <0.0005 | <0.0005 | ---- |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | ---- | ---- | <0.0005 | <0.0005 | ---- |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | ---- | ---- | <0.0005 | <0.0005 | ---- |

Client sample ID

| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH109_1401
19_0.9 | CPT001_BH109_1401
19_1.4 | CPT001_BH108_1401
19_0.0 | CPT001_BH108_1401
19_0.4 | CPT001_BH108_1401
19_1.4 |
|--|--------------------|--------|-------|-------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | |
| Compound | CAS Number | LOR | Unit | EM1900402-009 | EM1900402-010 | EM1900402-011 | EM1900402-012 | EM1900402-014 | |
| | | | | Result | Result | Result | Result | Result | |
| EP231C: Perfluoroalkyl Sulfonamides - Continued | | | | | | | | | |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | ---- | ---- | <0.0005 | <0.0005 | ---- | |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | ---- | ---- | <0.0005 | <0.0005 | ---- | |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- | |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | ---- | ---- | <0.0002 | <0.0002 | ---- | |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | ---- | ---- | <0.0005 | <0.0005 | ---- | |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | ---- | ---- | <0.0005 | <0.0005 | ---- | |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | ---- | ---- | <0.0005 | <0.0005 | ---- | |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | ---- | ---- | <0.0005 | <0.0005 | ---- | |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.0002 | mg/kg | ---- | ---- | 0.0008 | <0.0002 | ---- | |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.0002 | mg/kg | ---- | ---- | 0.0008 | <0.0002 | ---- | |
| Sum of PFAS (WA DER List) | ---- | 0.0002 | mg/kg | ---- | ---- | 0.0008 | <0.0002 | ---- | |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | ---- | ---- | 100 | 114 | ---- | |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | ---- | ---- | 81.4 | 80.2 | ---- | |
| Toluene-D8 | 2037-26-5 | 0.1 | % | ---- | ---- | 96.4 | 76.2 | ---- | |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | ---- | ---- | 91.5 | 86.7 | ---- | |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | ---- | ---- | 133 | 121 | ---- | |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | ---- | ---- | 102 | 114 | ---- | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | ---- | ---- | 98.4 | 97.7 | ---- | |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT001_BH109_1401
19_0.9 | CPT001_BH109_1401
19_1.4 | CPT001_BH108_1401
19_0.0 | CPT001_BH108_1401
19_0.4 | CPT001_BH108_1401
19_1.4 |
|---|------------|--------|------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1900402-009 | EM1900402-010 | EM1900402-011 | EM1900402-012 | EM1900402-014 |
| | | | | Result | Result | Result | Result | Result |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | ---- | ---- | 109 | 120 | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | ---- | ---- | 111 | 113 | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | ---- | ---- | 114 | 126 | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | ---- | ---- | 117 | 131 | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | ---- | ---- | 101 | 101 | ---- |
| EP231S: PFAS Surrogate | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | ---- | ---- | 89.5 | 86.0 | ---- |
| 13C8-PFOA | ---- | 0.0002 | % | ---- | ---- | 73.5 | 68.5 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | | CPT039_BH13_14011
9_0.0 | CPT039_BH13_14011
9_0.4 | QC150_140119 | CPT039_BH13_14011
9_1.4 | CPT032_BH11_14011
9_0.2 | |
|---|------------|-------|-------------|-------------------|--|----------------------------|----------------------------|-------------------|----------------------------|----------------------------|--|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | | 14-Jan-2019 00:00 | | 14-Jan-2019 00:00 | | 14-Jan-2019 00:00 | |
| Compound | CAS Number | LOR | Unit | EM1900402-016 | | EM1900402-017 | | EM1900402-019 | | EM1900402-020 | |
| | | | | Result | | Result | | Result | | Result | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | 4.2 | | 4.5 | | 5.5 | | ---- | |
| EA033-A: Actual Acidity | | | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | ---- | | 5.3 | | ---- | | 5.5 | |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | ---- | | 7 | | ---- | | 8 | |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | ---- | | <0.02 | | ---- | | <0.02 | |
| EA033-B: Potential Acidity | | | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | ---- | | 0.009 | | ---- | | 0.008 | |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | ---- | | <10 | | ---- | | <10 | |
| EA033-E: Acid Base Accounting | | | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | ---- | | 1.5 | | ---- | | 1.5 | |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | ---- | | <0.02 | | ---- | | 0.02 | |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | | 12 | | ---- | | 13 | |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | | <1 | | ---- | | <1 | |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | | <0.02 | | ---- | | 0.02 | |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | | 12 | | ---- | | 13 | |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | | <1 | | ---- | | <1 | |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 3.9 | | 2.1 | | 13.1 | | ---- | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | | <5 | | 6 | | ---- | |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | | <1 | | <1 | | ---- | |
| Copper | 7440-50-8 | 5 | mg/kg | <5 | | <5 | | <5 | | ---- | |
| Lead | 7439-92-1 | 5 | mg/kg | <5 | | <5 | | 6 | | ---- | |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | | <2 | | <2 | | ---- | |
| Nickel | 7440-02-0 | 2 | mg/kg | <2 | | <2 | | 9 | | ---- | |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | | <5 | | <5 | | ---- | |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | | <2 | | <2 | | ---- | |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | | <5 | | <5 | | ---- | |
| Zinc | 7440-66-6 | 5 | mg/kg | 5 | | <5 | | <5 | | ---- | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | | <0.1 | | <0.1 | | ---- | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | | <0.5 | | <0.5 | | ---- | |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT039_BH13_14011
9_0.0 | CPT039_BH13_14011
9_0.4 | QC150_140119 | CPT039_BH13_14011
9_1.4 | CPT032_BH11_14011
9_0.2 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|-------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-016 | EM1900402-017 | EM1900402-019 | EM1900402-020 | EM1900402-027 |
| | | | | Result | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | 1 | <1 | <1 | ---- | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 50 | <40 | 110 | ---- | 50 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | <0.1 | <0.1 | ---- | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | <0.4 | <0.4 | ---- | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | <0.04 | <0.04 | ---- | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT039_BH13_14011
9_0.0 | CPT039_BH13_14011
9_0.4 | QC150_140119 | CPT039_BH13_14011
9_1.4 | CPT032_BH11_14011
9_0.2 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|-------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-016 | EM1900402-017 | EM1900402-019 | EM1900402-020 | EM1900402-027 |
| | | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | <5 | <5 | ---- | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | <5 | <5 | ---- | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | <5 | <5 | ---- | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | <5 | <5 | ---- | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | <5 | <5 | ---- | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT039_BH13_14011
9_0.0 | CPT039_BH13_14011
9_0.4 | QC150_140119 | CPT039_BH13_14011
9_1.4 | CPT032_BH11_14011
9_0.2 |
|--|-------------------|------|-------|------------------|----------------------------|----------------------------|-------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-016 | EM1900402-017 | EM1900402-019 | EM1900402-020 | EM1900402-027 |
| | | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | 0.6 | 0.6 | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | 1.2 | 1.2 | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4.4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4.4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | <0.05 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT039_BH13_14011
9_0.0 | CPT039_BH13_14011
9_0.4 | QC150_140119 | CPT039_BH13_14011
9_1.4 | CPT032_BH11_14011
9_0.2 |
|--|--------------------------|-------|-------|------------------|----------------------------|----------------------------|-------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-016 | EM1900402-017 | EM1900402-019 | EM1900402-020 | EM1900402-027 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4.4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | <0.05 | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | <10 | <10 | ---- | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | <10 | <10 | ---- | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | 100 | <100 | <100 | <100 | ---- | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | 130 | <100 | <100 | <100 | ---- | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | 230 | <50 | <50 | <50 | ---- | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | <50 | <50 | ---- | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | 190 | <100 | <100 | <100 | ---- | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | <100 | <100 | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | 190 | <50 | <50 | <50 | ---- | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | <50 | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | <10 | <10 | ---- | <10 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 110 | 108 | 116 | 116 | ---- | 107 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 86.3 | 82.4 | 85.6 | 85.6 | ---- | 74.4 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 84.9 | 76.0 | 79.8 | 79.8 | ---- | 79.2 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 89.0 | 82.6 | 87.3 | 87.3 | ---- | 88.6 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 118 | 118 | 118 | 118 | ---- | 114 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 105 | 105 | 119 | 119 | ---- | 104 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT039_BH13_14011
9_0.0 | CPT039_BH13_14011
9_0.4 | QC150_140119 | CPT039_BH13_14011
9_1.4 | CPT032_BH11_14011
9_0.2 |
|---|------------|-------|------|----------------------------|----------------------------|-------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1900402-016 | EM1900402-017 | EM1900402-019 | EM1900402-020 | EM1900402-027 |
| | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 93.9 | 92.6 | 107 | ---- | 94.5 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 113 | 109 | 119 | ---- | 107 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 105 | 110 | 117 | ---- | 102 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 119 | 112 | 132 | ---- | 109 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 119 | 119 | 133 | ---- | 116 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 95.2 | 91.0 | 106 | ---- | 87.1 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | | | | |
|---|------------|-------|-------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | CPT032_BH11_14011
9_0.5 | CPT032_BH11_14011
9_1.0 | CPT032_BH11_14011
9_1.5 | CPT036B_BH12_1401
19_0.2 | CPT036B_BH12_1401
19_0.5 |
| Compound | | | | CAS Number | LOR | Unit | | |
| | | | | EM1900402-028 | EM1900402-029 | EM1900402-030 | EM1900402-033 | EM1900402-034 |
| | | | | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | ---- | ---- | 5.7 | 4.5 | ---- |
| EA033-A: Actual Acidity | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 4.7 | 5.2 | ---- | ---- | 5.1 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 28 | 18 | ---- | ---- | 13 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.04 | 0.03 | ---- | ---- | 0.02 |
| EA033-B: Potential Acidity | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.007 | 0.006 | ---- | ---- | 0.006 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | ---- | ---- | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | ---- | ---- | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.05 | 0.04 | ---- | ---- | 0.03 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 32 | 22 | ---- | ---- | 17 |
| Liming Rate | ---- | 1 | kg CaCO3/t | 2 | 2 | ---- | ---- | 1 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.05 | 0.04 | ---- | ---- | 0.03 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 32 | 22 | ---- | ---- | 17 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 2 | 2 | ---- | ---- | 1 |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | ---- | ---- | 26.3 | 13.6 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | ---- | ---- | 28 | 6 | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | ---- | ---- | <5 | <5 | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | ---- | ---- | 41 | 9 | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | ---- | ---- | <2 | <2 | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | ---- | ---- | 4 | <2 | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | ---- | ---- | <5 | <5 | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | ---- | ---- | <2 | <2 | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | ---- | ---- | <5 | <5 | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | ---- | ---- | <5 | 11 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | ---- | ---- | 0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | ---- | ---- | <0.5 | <0.5 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT032_BH11_14011
9_0.5 | CPT032_BH11_14011
9_1.0 | CPT032_BH11_14011
9_1.5 | CPT036B_BH12_1401
19_0.2 | CPT036B_BH12_1401
19_0.5 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-028 | EM1900402-029 | EM1900402-030 | EM1900402-033 | EM1900402-034 |
| | | | | Result | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | ---- | ---- | ---- | <1 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | ---- | ---- | ---- | 240 | 150 | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | ---- | ---- | ---- | <0.1 | <0.1 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | ---- | ---- | ---- | <0.2 | <0.2 | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | ---- | ---- | ---- | <0.2 | <0.2 | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | ---- | ---- | ---- | <1 | <1 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | ---- | ---- | ---- | <0.02 | <0.02 | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | ---- | ---- | ---- | <0.01 | <0.01 | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | ---- | ---- | ---- | <0.4 | <0.4 | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | ---- | ---- | ---- | <0.02 | <0.02 | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | ---- | ---- | ---- | <0.01 | <0.01 | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | ---- | ---- | ---- | <0.02 | <0.02 | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | ---- | ---- | ---- | <0.01 | <0.01 | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | ---- | ---- | ---- | <0.01 | <0.01 | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | ---- | ---- | ---- | <0.02 | <0.02 | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | ---- | ---- | ---- | <0.02 | <0.02 | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | ---- | ---- | ---- | <0.04 | <0.04 | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | ---- | ---- | ---- | <0.02 | <0.02 | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | ---- | ---- | ---- | <0.01 | <0.01 | ---- |
| 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | ---- | ---- | ---- | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | ---- | ---- | ---- | <0.02 | <0.02 | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | ---- | ---- | ---- | <0.02 | <0.02 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT032_BH11_14011
9_0.5 | CPT032_BH11_14011
9_1.0 | CPT032_BH11_14011
9_1.5 | CPT036B_BH12_1401
19_0.2 | CPT036B_BH12_1401
19_0.5 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-028 | EM1900402-029 | EM1900402-030 | EM1900402-033 | EM1900402-034 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | ---- | ---- | <0.02 | <0.02 | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | ---- | ---- | <0.02 | <0.02 | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | ---- | ---- | <0.01 | <0.01 | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | ---- | <0.01 | <0.01 | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | ---- | <0.01 | <0.01 | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | ---- | ---- | <0.05 | <0.05 | ---- | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | ---- | ---- | <0.05 | <0.05 | ---- | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | ---- | ---- | <0.05 | <0.05 | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | ---- | ---- | <0.2 | <0.2 | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | ---- | ---- | <5 | <5 | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | ---- | ---- | <5 | <5 | ---- | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | ---- | ---- | <5 | <5 | ---- | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | ---- | ---- | <5 | <5 | ---- | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | ---- | ---- | <5 | <5 | ---- | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | ---- | ---- | <1 | <1 | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | ---- | ---- | <0.5 | <0.5 | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | ---- | ---- | <0.5 | <0.5 | ---- | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | ---- | ---- | <0.5 | <0.5 | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | ---- | ---- | <0.5 | <0.5 | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT032_BH11_14011
9_0.5 | CPT032_BH11_14011
9_1.0 | CPT032_BH11_14011
9_1.5 | CPT036B_BH12_1401
19_0.2 | CPT036B_BH12_1401
19_0.5 |
|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-028 | EM1900402-029 | EM1900402-030 | EM1900402-033 | EM1900402-034 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | ---- | ---- | ---- | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | ---- | ---- | ---- | 0.6 | 0.6 | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | ---- | ---- | ---- | 1.2 | 1.2 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| 4.4'-DDE | 72-55-9 | 0.05 | mg/kg | ---- | ---- | ---- | <0.05 | <0.05 | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | ---- | ---- | ---- | <0.03 | <0.03 | ---- |
| 4.4'-DDD | 72-54-8 | 0.05 | mg/kg | ---- | ---- | ---- | <0.05 | <0.05 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT032_BH11_14011
9_0.5 | CPT032_BH11_14011
9_1.0 | CPT032_BH11_14011
9_1.5 | CPT036B_BH12_1401
19_0.2 | CPT036B_BH12_1401
19_0.5 |
|--|--------------------------|-------|-------|------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-028 | EM1900402-029 | EM1900402-030 | EM1900402-033 | EM1900402-034 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | ---- | ---- | <0.05 | <0.05 | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | ---- | ---- | <0.05 | <0.05 | ---- | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | ---- | <0.03 | <0.03 | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | ---- | ---- | <10 | <10 | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | ---- | ---- | <50 | <50 | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | ---- | ---- | <10 | <10 | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | ---- | ---- | <100 | 130 | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | ---- | ---- | <100 | <100 | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | ---- | ---- | <50 | 130 | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | ---- | ---- | <50 | <50 | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | ---- | ---- | <100 | 180 | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | ---- | ---- | <100 | <100 | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | ---- | ---- | <50 | 180 | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | ---- | ---- | <50 | <50 | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | ---- | ---- | <10 | <10 | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | ---- | ---- | 108 | 106 | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | ---- | ---- | 77.9 | 81.6 | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | ---- | ---- | 73.4 | 78.1 | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | ---- | ---- | 83.6 | 85.8 | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | ---- | ---- | 106 | 119 | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | ---- | ---- | 99.0 | 114 | ---- | ---- |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT032_BH11_14011
9_0.5 | CPT032_BH11_14011
9_1.0 | CPT032_BH11_14011
9_1.5 | CPT036B_BH12_1401
19_0.2 | CPT036B_BH12_1401
19_0.5 |
|---|------------|-------|------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1900402-028 | EM1900402-029 | EM1900402-030 | EM1900402-033 | EM1900402-034 |
| | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | ---- | ---- | 81.3 | 106 | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | ---- | ---- | 103 | 122 | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | ---- | ---- | 113 | 111 | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | ---- | ---- | 113 | 121 | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | ---- | ---- | 119 | 128 | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | ---- | ---- | 95.1 | 96.8 | ---- |



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|---|------------|-------|-------------------|---------------|-----------------------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | Client sample ID | | CPT036B_BH12_1401
19_1.5 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | 14-Jan-2019 00:00 | | ---- | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1900402-036 | ----- | ----- | ----- | ----- | ----- |
| Result | | | | ---- | ---- | ---- | ---- | ---- | ---- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | 5.6 | ---- | ---- | ---- | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.4 | ---- | ---- | ---- | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 14 | ---- | ---- | ---- | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.02 | ---- | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | ---- | ---- | ---- | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | ---- | ---- | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.02 | ---- | ---- | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 14 | ---- | ---- | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | 1 | ---- | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.02 | ---- | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 14 | ---- | ---- | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 1 | ---- | ---- | ---- | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 23.4 | ---- | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | ---- | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | 11 | ---- | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | ---- | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | 22 | ---- | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | ---- | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | 0.1 | ---- | ---- | ---- | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | ---- | ---- |



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|--|-------------------|------|-------|------------------|-----------------------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT036B_BH12_1401
19_1.5 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900402-036 | ----- | ----- | ----- | ----- |
| | | | | Result | | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | <1 | ---- | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 120 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | ---- | ---- | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | ---- | ---- | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |



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|--|-------------------|------|-------|------------------|-----------------------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT036B_BH12_1401
19_1.5 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900402-036 | ----- | ----- | ----- | ----- |
| | | | | | Result | ---- | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | ---- | ---- | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | ---- | ---- | ---- | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | ---- | ---- | ---- | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | ---- | ---- | ---- | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | ---- | ---- | ---- | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | ---- | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |



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|---|-------------------|------|-------|------------------|-----------------------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT036B_BH12_1401
19_1.5 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900402-036 | ----- | ----- | ----- | ----- |
| | | | | | Result | ---- | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |



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|---|--------------------------|-------|-------|------------------|-----------------------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT036B_BH12_1401
19_1.5 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900402-036 | ----- | ----- | ----- | ----- |
| Result | | | | | | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | ---- | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | ---- | ---- | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | <100 | ---- | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | <50 | ---- | ---- | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | ---- | ---- | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | ---- | ---- | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 112 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 70.8 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 72.3 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 79.0 | ---- | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 112 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 106 | ---- | ---- | ---- | ---- |



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|--|------------|-------|------|-----------------------------|-----------------------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT036B_BH12_1401
19_1.5 | ---- | ---- | ---- | ---- |
| | | | | Client sampling date / time | 14-Jan-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900402-036 | ----- | ----- | ----- | ----- |
| | | | | | Result | ---- | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | 85.4 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | 108 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | 112 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | 116 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | 122 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | 91.5 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC550_140119 | QC551_140119 | QC350_140119 | QC450_140119 | QC311_140119 |
|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-023 | EM1900402-024 | EM1900402-025 | EM1900402-026 | EM1900402-039 |
| | | | | | Result | Result | Result | Result | Result |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | ---- | ---- | 6.03 | ---- | 6.12 |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | ---- | ---- | <0.001 | ---- | <0.001 |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | ---- | ---- | <0.001 | ---- | <0.001 |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | ---- | ---- | <0.0001 | ---- | <0.0001 |
| Copper | 7440-50-8 | 0.001 | mg/L | | ---- | ---- | <0.001 | ---- | <0.001 |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | ---- | ---- | <0.001 | ---- | <0.001 |
| Nickel | 7440-02-0 | 0.001 | mg/L | | ---- | ---- | <0.001 | ---- | <0.001 |
| Lead | 7439-92-1 | 0.001 | mg/L | | ---- | ---- | <0.001 | ---- | <0.001 |
| Selenium | 7782-49-2 | 0.01 | mg/L | | ---- | ---- | <0.01 | ---- | <0.01 |
| Tin | 7440-31-5 | 0.001 | mg/L | | ---- | ---- | <0.001 | ---- | <0.001 |
| Zinc | 7440-66-6 | 0.005 | mg/L | | ---- | ---- | <0.005 | ---- | <0.005 |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | ---- | ---- | <0.0001 | ---- | <0.0001 |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | ---- | ---- | <0.01 | ---- | <0.01 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | ---- | ---- | <0.004 | ---- | <0.004 |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | ---- | ---- | <0.1 | ---- | <0.1 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | ---- | ---- | <1 | ---- | <1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Methylene chloride | 75-09-2 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Trichloroethene | 79-01-6 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC550_140119 | QC551_140119 | QC350_140119 | QC450_140119 | QC311_140119 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-023 | EM1900402-024 | EM1900402-025 | EM1900402-026 | EM1900402-039 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | ---- | ---- | ---- | <5 | ---- | <5 |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | ---- | ---- | ---- | <5 | ---- | <5 |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | ---- | ---- | ---- | <5 | ---- | <5 |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | ---- | ---- | ---- | <5 | ---- | <5 |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | ---- | ---- | ---- | <5 | ---- | <5 |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | ---- | ---- | ---- | <5 | ---- | <5 |
| 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | ---- | ---- | ---- | <5 | ---- | <5 |
| 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | ---- | ---- | ---- | <5 | ---- | <5 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | ---- | ---- | ---- | <5 | ---- | <5 |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | ---- | ---- | ---- | <5 | ---- | <5 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Fluorene | 86-73-7 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Anthracene | 120-12-7 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Pyrene | 129-00-0 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Chrysene | 218-01-9 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | ---- | ---- | ---- | <0.5 | ---- | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Dibenz(a.h)anthracene | 53-70-3 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| Benzo(g.h.i)perylene | 191-24-2 | 1.0 | µg/L | ---- | ---- | ---- | <1.0 | ---- | <1.0 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | ---- | ---- | ---- | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | ---- | ---- | ---- | <0.5 | ---- | <0.5 |
| EP075A: Phenolic Compounds | | | | | | | | | |
| Phenol | 108-95-2 | 2 | µg/L | ---- | ---- | ---- | <2 | ---- | <2 |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | ---- | ---- | ---- | <2 | ---- | <2 |

EP075I: Organochlorine Pesticides

[illegible]



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC550_140119 | QC551_140119 | QC350_140119 | QC450_140119 | QC311_140119 |
|--|-------------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-023 | EM1900402-024 | EM1900402-025 | EM1900402-026 | EM1900402-039 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| alpha-BHC | 319-84-6 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| beta-BHC | 319-85-7 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| gamma-BHC | 58-89-9 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| delta-BHC | 319-86-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Heptachlor | 76-44-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Aldrin | 309-00-2 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Heptachlor epoxide | 1024-57-3 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| alpha-Endosulfan | 959-98-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 4,4'-DDE | 72-55-9 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Dieldrin | 60-57-1 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Endrin | 72-20-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| beta-Endosulfan | 33213-65-9 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 4,4'-DDD | 72-54-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Endosulfan sulfate | 1031-07-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 4,4'-DDT | 50-29-3 | 4 | µg/L | | ---- | ---- | <4 | ---- | <4 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 4 | µg/L | | ---- | ---- | <4 | ---- | <4 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-29-3 | 4 | µg/L | | ---- | ---- | <4 | ---- | <4 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| C10 - C14 Fraction | ---- | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| C15 - C28 Fraction | ---- | 100 | µg/L | | ---- | ---- | <100 | ---- | <100 |
| C29 - C36 Fraction | ---- | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | ---- | ---- | <50 | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | ---- | ---- | ---- | ---- | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | ---- | ---- | <100 | ---- | <100 |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | ---- | ---- | <100 | ---- | <100 |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | ---- | ---- | <100 | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | ---- | ---- | <100 | ---- | <100 |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | ---- | ---- | <100 | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC550_140119 | QC551_140119 | QC350_140119 | QC450_140119 | QC311_140119 |
|--|-------------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-023 | EM1900402-024 | EM1900402-025 | EM1900402-026 | EM1900402-039 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued | | | | | | | | | |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | ---- | ---- | ---- | ---- | ---- | <100 |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | <1 | <1 | <1 | <1 |
| Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | <2 | <2 | <2 | <2 |
| Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | <2 | <2 | <2 | <2 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | <2 | <2 | <2 | <2 | <2 | <2 |
| ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | <2 | <2 | <2 | <2 |
| ^ Total Xylenes | ---- | 2 | µg/L | <2 | <2 | <2 | <2 | <2 | <2 |
| ^ Sum of BTEX | ---- | 1 | µg/L | <1 | <1 | <1 | <1 | <1 | <1 |
| Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | <5 | <5 | <5 | <5 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.01 | µg/L | ---- | ---- | <0.01 | ---- | ---- | ---- |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC550_140119 | QC551_140119 | QC350_140119 | QC450_140119 | QC311_140119 |
|---|-------------|-------|------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | |
| Compound | CAS Number | LOR | Unit | EM1900402-023 | EM1900402-024 | EM1900402-025 | EM1900402-026 | EM1900402-039 | |
| | | | | Result | Result | Result | Result | Result | |
| EP231B: Perfluoroalkyl Carboxylic Acids - Continued | | | | | | | | | |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.005 | µg/L | ---- | ---- | <0.005 | ---- | ---- | |
| Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.005 | µg/L | ---- | ---- | <0.005 | ---- | ---- | |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.005 | µg/L | ---- | ---- | <0.005 | ---- | ---- | |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.005 | µg/L | ---- | ---- | <0.005 | ---- | ---- | |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.005 | µg/L | ---- | ---- | <0.005 | ---- | ---- | |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.005 | µg/L | ---- | ---- | <0.005 | ---- | ---- | |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.005 | µg/L | ---- | ---- | <0.005 | ---- | ---- | |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.005 | µg/L | ---- | ---- | <0.005 | ---- | ---- | |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.005 | µg/L | ---- | ---- | <0.005 | ---- | ---- | |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.005 | µg/L | ---- | ---- | <0.005 | ---- | ---- | |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.002 | µg/L | ---- | ---- | <0.002 | ---- | ---- | |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC550_140119 | QC551_140119 | QC350_140119 | QC450_140119 | QC311_140119 |
|--|--------------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-023 | EM1900402-024 | EM1900402-025 | EM1900402-026 | EM1900402-039 |
| | | | | | Result | Result | Result | Result | Result |
| EP231P: PFAS Sums - Continued | | | | | | | | | |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.002 | µg/L | | ---- | ---- | <0.002 | ---- | ---- |
| Sum of PFAS (WA DER List) | ---- | 0.002 | µg/L | | ---- | ---- | <0.002 | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | ---- | ---- | 93.0 | ---- | 88.9 |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | ---- | ---- | 87.9 | ---- | 93.2 |
| Toluene-D8 | 2037-26-5 | 5 | % | | ---- | ---- | 81.9 | ---- | 86.6 |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | ---- | ---- | 88.3 | ---- | 89.3 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | ---- | ---- | 28.2 | ---- | 30.0 |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | ---- | ---- | 65.4 | ---- | 73.3 |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | ---- | ---- | 94.2 | ---- | 86.5 |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | ---- | ---- | 80.9 | ---- | 94.4 |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | ---- | ---- | 96.1 | ---- | 95.8 |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | ---- | ---- | 99.6 | ---- | 95.1 |
| EP075S: Acid Extractable Surrogates | | | | | | | | | |
| 2-Fluorophenol | 367-12-4 | 2 | % | | ---- | ---- | 45.2 | ---- | 50.2 |
| Phenol-d6 | 13127-88-3 | 2 | % | | ---- | ---- | 31.6 | ---- | 33.2 |
| 2-Chlorophenol-D4 | 93951-73-6 | 2 | % | | ---- | ---- | 67.1 | ---- | 76.4 |
| 2,4,6-Tribromophenol | 118-79-6 | 2 | % | | ---- | ---- | 83.6 | ---- | 80.5 |
| EP075T: Base/Neutral Extractable Surrogates | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 2 | % | | ---- | ---- | 74.2 | ---- | 88.0 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 2 | % | | ---- | ---- | 68.2 | ---- | 81.0 |
| 2-Fluorobiphenyl | 321-60-8 | 2 | % | | ---- | ---- | 77.6 | ---- | 93.1 |
| Anthracene-d10 | 1719-06-8 | 2 | % | | ---- | ---- | 100 | ---- | 98.8 |
| 4-Terphenyl-d14 | 1718-51-0 | 2 | % | | ---- | ---- | 105 | ---- | 99.9 |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 102 | 103 | 94.7 | 100 | 98.5 |
| Toluene-D8 | 2037-26-5 | 2 | % | | 84.6 | 87.1 | 78.8 | 86.3 | 83.6 |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 97.5 | 95.2 | 91.0 | 97.7 | 94.8 |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.002 | % | | ---- | ---- | 81.4 | ---- | ---- |



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|---|------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC550_140119 | QC551_140119 | QC350_140119 | QC450_140119 | QC311_140119 |
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900402-023 | EM1900402-024 | EM1900402-025 | EM1900402-026 | EM1900402-039 |
| | | | | | Result | Result | Result | Result | Result |
| EP231S: PFAS Surrogate - Continued | | | | | | | | | |
| 13C8-PFOA | ---- | 0.002 | % | | ---- | ---- | 82.4 | ---- | ---- |



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|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC411_140119 | QC518_140119 | QC519_140119 | ---- | ---- |
| Client sampling date / time | | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900402-040 | EM1900402-041 | EM1900402-042 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | ---- | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | ---- | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | ---- | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | ---- | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | ---- | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | ---- | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | ---- | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 96.2 | 104 | 103 | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 77.4 | 93.8 | 86.6 | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 95.2 | 98.3 | 100 | ---- | ---- |



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| Sub-Matrix: SOIL | | □□□□ □□□ □ s □ | |
|---|------------|----------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |
| EP231S: PFAS Surrogate | | | |
| 13C4-PFOS | ---- | 60 | 120 |
| 13C8-PFOA | ---- | 60 | 120 |

| Sub-Matrix: WATER | | □□□□ □□□ □ s □ | |
|--|------------|----------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates | | | |
| 2-Fluorophenol | 367-12-4 | 10 | 75 |
| Phenol-d6 | 13127-88-3 | 10 | 65 |

| Sub-Matrix: WATER | | | |
|--|------------|----|-----|
| Compound | CAS Number | % | |
| EP075S: Acid Extractable Surrogates - Continued | | | |
| 2-Chlorophenol-D4 | 93951-73-6 | 21 | 103 |
| 2,4,6-Tribromophenol | 118-79-6 | 22 | 120 |
| EP075T: Base/Neutral Extractable Surrogates | | | |
| Nitrobenzene-D5 | 4165-60-0 | 24 | 116 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 23 | 99 |
| 2-Fluorobiphenyl | 321-60-8 | 32 | 114 |
| Anthracene-d10 | 1719-06-8 | 47 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 44 | 124 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |
| EP231S: PFAS Surrogate | | | |
| 13C4-PFOS | ---- | 60 | 120 |
| 13C8-PFOA | ---- | 60 | 120 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900402 | Page | : 1 of 20 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 14-Jan-2019 17:30 |
| Order number | : ---- | Date Analysed | : 16-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 24-Jan-2019 13:32 |
| No. of samples received | : 42 | | |
| No. of samples analysed | : 29 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Category C

| Client Sample ID | ALS Sample ID | Compound | Method | LOR | Limits | Result |
|-----------------------------|---------------|---|--------------|-----|-------------|-----------|
| CPT001_BH108_140
119_0.0 | EM1900402-011 | Benzo(a)pyrene | EP075-EM | 0.5 | < 5 mg/kg | 9.2 mg/kg |
| CPT001_BH108_140
119_0.0 | EM1900402-011 | Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | < 100 mg/kg | 114 mg/kg |

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| Client Sample ID | ALS Sample ID | Compound | Method | LOR | Limits | Result |
|-----------------------------|---------------|---|--------------|-----|-------------|-----------|
| CPT001_BH109_140
119_0.5 | EM1900402-008 | Arsenic | EG005T | 5 | < 20 mg/kg | 20 mg/kg |
| CPT001_BH108_140
119_0.0 | EM1900402-011 | Zinc | EG005T | 5 | < 200 mg/kg | 507 mg/kg |
| CPT001_BH108_140
119_0.0 | EM1900402-011 | Benzo(a)pyrene | EP075-EM | 0.5 | < 1 mg/kg | 9.2 mg/kg |
| CPT001_BH108_140
119_0.0 | EM1900402-011 | Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | < 20 mg/kg | 114 mg/kg |
| CPT001_BH108_140
119_0.4 | EM1900402-012 | Arsenic | EG005T | 5 | < 20 mg/kg | 49 mg/kg |
| CPT032_BH11_1401
19_1.5 | EM1900402-030 | Arsenic | EG005T | 5 | < 20 mg/kg | 28 mg/kg |

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT029_BH10_140119_0.0 | CPT029_BH10_140119_0.9 | CPT001_BH10_9_140119_0.0 | CPT001_BH10_9_140119_0.5 | CPT001_BH10_8_140119_0.0 | | |
|--|--------------|------|---------|--------------------|--------------|------------------------|------------------------|--------------------------|--------------------------|--------------------------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | | | | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | EM1900402-001 | EM1900402-003 | EM1900402-007 | EM1900402-008 | EM1900402-011 | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.6 | 6.9 | 7.0 | 7.4 | 5.8 | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | <5 | 16 | 20 | 8 | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | <1 | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 | <5 | 7 | <5 | 9 | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 15 | 12 | 19 | <5 | 17 | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | <2 | <2 | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 6 | 6 | 6 | 6 | 4 | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | <5 | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | <2 | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 6 | <5 | 140 | 7 | 507 | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | 1 | <1 | <1 | <1 | <1 | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 160 | 180 | 70 | 120 | 70 | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | <1 | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT029_BH10
_140119_0.0 | CPT029_BH10
_140119_0.9 | CPT001_BH10
9_140119_0.0 | CPT001_BH10
9_140119_0.5 | CPT001_BH10
8_140119_0.0 |
|---|--------------|------|-------|------------------|--------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | 0.6 | <0.5 | 9.2 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | 5.8 | <0.5 | 114 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | <50 | 120 | <50 | 400 |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT029_BH10
_140119_0.0 | CPT029_BH10
_140119_0.9 | CPT001_BH10
9_140119_0.0 | CPT001_BH10
9_140119_0.5 | CPT001_BH10
8_140119_0.0 | | | |
|--|--|--|--|--------------------|------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------|---------------|---------------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ | |
| | | | | □□ □□ | □□□□ | | | | | | | | |
| Compound | | | | Method | LOR | Unit | □□ □□ | □□ □□ | EM1900402-001 | EM1900402-003 | EM1900402-007 | EM1900402-008 | EM1900402-011 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | |
| pH (CaCl2) | | | | EA001 | 0.1 | pH Unit | 4 | 9 | 5.6 | 6.9 | 7.0 | 7.4 | 5.8 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | | |
| Arsenic | | | | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | 16 | 20 | 8 |
| Cadmium | | | | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | <1 |
| Copper | | | | EG005T | 5 | mg/kg | ---- | 5000 | <5 | <5 | 7 | <5 | 9 |
| Lead | | | | EG005T | 5 | mg/kg | ---- | 1500 | 15 | 12 | 19 | <5 | 17 |
| Molybdenum | | | | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | <2 | <2 |
| Nickel | | | | EG005T | 2 | mg/kg | ---- | 3000 | 6 | 6 | 6 | 6 | 4 |
| Selenium | | | | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Silver | | | | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | <2 |
| Tin | | | | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 |
| Zinc | | | | EG005T | 5 | mg/kg | ---- | 35000 | 6 | <5 | 140 | 7 | 507 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | |
| Mercury | | | | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | |
| Hexavalent Chromium | | | | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | |
| Total Cyanide | | | | EK026SF | 1 | mg/kg | ---- | 2500 | 1 | <1 | <1 | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | | | | | |
| Fluoride | | | | EK040T | 40 | mg/kg | ---- | 10000 | 160 | 180 | 70 | 120 | 70 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | |
| Benzene | | | | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | | | | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | |
| Vinyl chloride | | | | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | | | | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Sum of other chlorinated hydrocarbons | | | | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | | | | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | | | | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT029_BH10
_140119_0.0 | CPT029_BH10
_140119_0.9 | CPT001_BH10
9_140119_0.0 | CPT001_BH10
9_140119_0.5 | CPT001_BH10
8_140119_0.0 |
|--|--------------|------|-------|--------------------|--------------|--------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900402-001 | EM1900402-003 | EM1900402-007 | EM1900402-008 | EM1900402-011 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 5 | <0.5 | <0.5 | 0.6 | <0.5 | 9.2 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 100 | <0.5 | <0.5 | 5.8 | <0.5 | 114 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 650 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 10000 | <50 | <50 | 120 | <50 | 400 |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT029_BH10_140119_0.0 | CPT029_BH10_140119_0.9 | CPT001_BH10_9_140119_0.0 | CPT001_BH10_9_140119_0.5 | CPT001_BH10_8_140119_0.0 |
|--|--------------|------|---------|--------------------|---------|------------------------|------------------------|--------------------------|--------------------------|--------------------------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□□□ □□ | □□□□ □□ | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 |
| | | | | □□ □□ | □□□□ | EM1900402-001 | EM1900402-003 | EM1900402-007 | EM1900402-008 | EM1900402-011 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.6 | 6.9 | 7.0 | 7.4 | 5.8 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | <5 | 16 | 20 | 8 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | <5 | <5 | 7 | <5 | 9 |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 15 | 12 | 19 | <5 | 17 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 6 | 6 | 6 | 6 | 4 |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 6 | <5 | 140 | 7 | 507 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | 1 | <1 | <1 | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 160 | 180 | 70 | 120 | 70 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | 0.1 | <0.1 | 0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | Client sample ID | | | CPT029_BH10_140119_0.0 | CPT029_BH10_140119_0.9 | CPT001_BH10_9_140119_0.0 | CPT001_BH10_9_140119_0.5 | CPT001_BH10_8_140119_0.0 |
|---|--------------|------|-------|--------------------|------------------|------------------|------------------------|------------------------|--------------------------|--------------------------|--------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 14-Jan-2019 15:00 | 14-Jan-2019 15:00 | 14-Jan-2019 15:00 | 14-Jan-2019 15:00 | 14-Jan-2019 15:00 |
| Compound | Method | LOR | Unit | | □□□□ □□
□□□ □ | □□□□ □□
□□□ □ | EM1900402-001 | EM1900402-003 | EM1900402-007 | EM1900402-008 | EM1900402-011 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 1 | <0.5 | <0.5 | 0.6 | <0.5 | 9.2 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 20 | <0.5 | <0.5 | 5.8 | <0.5 | 114 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 100 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 1000 | <50 | <50 | 120 | <50 | 400 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT001_BH10
8_140119_0.4 | CPT039_BH13
_140119_0.0 | CPT039_BH13
_140119_0.4 | QC150_14011
9 | CPT032_BH11
_140119_0.2 |
|---|--------------|------|---------|------------------|--------------|-----------------------------|----------------------------|----------------------------|----------------------|----------------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1900402-012 | EM1900402-016 | EM1900402-017 | EM1900402-019 | EM1900402-027 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 4.5 | 4.2 | 4.5 | 5.5 | 4.1 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 49 | <5 | <5 | 6 | <5 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 | <5 | <5 | <5 | <5 |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 8 | <5 | <5 | 6 | 7 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | 4 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 6 | <2 | <2 | 9 | <2 |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | <2 |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 38 | 5 | <5 | <5 | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | 1 | <1 | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 60 | 50 | <40 | 110 | 50 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT001_BH10
8_140119_0.4 | CPT039_BH13
_140119_0.0 | CPT039_BH13
_140119_0.4 | QC150_14011
9 | CPT032_BH11
_140119_0.2 |
|--|--------------|------|-------|------------------|--------------|-----------------------------|----------------------------|----------------------------|----------------------|----------------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1900402-012 | EM1900402-016 | EM1900402-017 | EM1900402-019 | EM1900402-027 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | 230 | <50 | <50 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT001_BH10
8_140119_0.4 | CPT039_BH13
_140119_0.0 | CPT039_BH13
_140119_0.4 | QC150_14011
9 | CPT032_BH11
_140119_0.2 | | |
|--|--------------|------|---------|--------------------|-------|-----------------------------|----------------------------|----------------------------|------------------|----------------------------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | □□ □□ | □□□□ | | | | | | □□□ □ | □□□ □ |
| Compound | Method | LOR | Unit | | | EM1900402-012 | EM1900402-016 | EM1900402-017 | EM1900402-019 | EM1900402-027 | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.5 | 4.2 | 4.5 | 5.5 | 4.1 | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | 49 | <5 | <5 | 6 | <5 | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | <1 | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | <5 | <5 | <5 | <5 | <5 | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 8 | <5 | <5 | 6 | 7 | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | 4 | <2 | <2 | <2 | <2 | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 6 | <2 | <2 | 9 | <2 | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | <2 | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 38 | 5 | <5 | <5 | <5 | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | 1 | <1 | <1 | <1 | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 60 | 50 | <40 | 110 | 50 | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | <1 | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT001_BH10
8_140119_0.4 | CPT039_BH13
_140119_0.0 | CPT039_BH13
_140119_0.4 | QC150_14011
9 | CPT032_BH11
_140119_0.2 |
|--|--------------|------|-------|--------------------|--------------|--------------|-----------------------------|----------------------------|----------------------------|----------------------|----------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900402-012 | EM1900402-016 | EM1900402-017 | EM1900402-019 | EM1900402-027 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | <50 | 230 | <50 | <50 | <50 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT001_BH10
8_140119_0.4 | CPT039_BH13
_140119_0.0 | CPT039_BH13
_140119_0.4 | QC150_14011
9 | CPT032_BH11
_140119_0.2 |
|--|--------------|------|---------|--------------------|---------|-----------------------------|----------------------------|----------------------------|----------------------|----------------------------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□□□ □□ | □□□□ □□ | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 |
| | | | | □□ □□ | □□□□ | EM1900402-012 | EM1900402-016 | EM1900402-017 | EM1900402-019 | EM1900402-027 |
| | | | | □□ □ | □□ □ | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.5 | 4.2 | 4.5 | 5.5 | 4.1 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | 49 | <5 | <5 | 6 | <5 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | <5 | <5 | <5 | <5 | <5 |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 8 | <5 | <5 | 6 | 7 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | 4 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 6 | <2 | <2 | 9 | <2 |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 38 | 5 | <5 | <5 | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | 1 | <1 | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 60 | 50 | <40 | 110 | 50 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT001_BH10
8_140119_0.4 | CPT039_BH13
_140119_0.0 | CPT039_BH13
_140119_0.4 | QC150_14011
9 | CPT032_BH11
_140119_0.2 |
|--|--------------|------|-------|--------------------|---------------|--------------|-----------------------------|----------------------------|----------------------------|----------------------|----------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 |
| Compound | Method | LOR | Unit | | □□□ □
□□ □ | □□□□
□□ □ | EM1900402-012 | EM1900402-016 | EM1900402-017 | EM1900402-019 | EM1900402-027 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | 230 | <50 | <50 | <50 | <50 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT032_BH11_140119_1.5 | CPT036B_BH12_140119_0.2 | CPT036B_BH12_140119_1.5 | ---- | ---- |
|---|--------------|------|---------|------------------|--------------|------------------------|-------------------------|-------------------------|-------|-------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 14-Jan-2019 15:00 | 14-Jan-2019 15:00 | 14-Jan-2019 15:00 | ---- | ---- |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | EM1900402-030 | EM1900402-033 | EM1900402-036 | ----- | ----- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.7 | 4.5 | 5.6 | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 28 | 6 | <5 | ---- | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | ---- | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 | <5 | <5 | ---- | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 41 | 9 | 11 | ---- | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | ---- | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 4 | <2 | 22 | ---- | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | ---- | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | ---- | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 | 11 | <5 | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | 0.1 | <0.1 | 0.1 | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | <1 | <1 | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 240 | 150 | 120 | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | ---- | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | ---- | ---- |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | ---- | ---- |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | ---- | ---- |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | | CPT032_BH11_140119_1.5 | CPT036B_BH12_140119_0.2 | CPT036B_BH12_140119_1.5 | ---- | ---- |
|--|--------------|------|-------|--------------------|-------------------|-------------------|------------------------|-------------------------|-------------------------|-------|-------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 14-Jan-2019 15:00 | 14-Jan-2019 15:00 | 14-Jan-2019 15:00 | ---- | ---- |
| Compound | Method | LOR | Unit | | □□□□ □□
□□□ □□ | □□□□ □□
□□□ □□ | EM1900402-030 | EM1900402-033 | EM1900402-036 | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | | ---- | 400 | <0.5 | <0.5 | <0.5 | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | | ---- | 4.8 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | | ---- | 4.8 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | | ---- | 50 | <0.05 | <0.05 | <0.05 | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | | ---- | 16 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | | ---- | 50 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | | ---- | 2600 | <10 | <10 | <10 | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | | ---- | 40000 | <50 | 130 | <50 | ---- | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT032_BH11 | CPT036B_BH1 | CPT036B_BH1 | ---- | ---- |
|--|--------------|------|---------|--------------------|----------------------|---------------|---------------|----------------------|----------------------|-------------|------|------|
| | | | | Sampling date/time | 140119_1.5 | | | 2_140119_0.2 | 2_140119_1.5 | | | |
| | | | | | 14-Jan-2019
15:00 | | | 14-Jan-2019
15:00 | 14-Jan-2019
15:00 | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | EM1900402-030 | EM1900402-033 | EM1900402-036 | ----- | ----- | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.7 | 4.5 | 5.6 | ---- | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | 28 | 6 | <5 | ---- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | ---- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | <5 | <5 | <5 | ---- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 41 | 9 | 11 | ---- | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | ---- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 4 | <2 | 22 | ---- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | ---- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | ---- | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | ---- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | <5 | 11 | <5 | ---- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | 0.1 | <0.1 | 0.1 | ---- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | ---- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | <1 | <1 | ---- | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 240 | 150 | 120 | ---- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | ---- | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | ---- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | ---- | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | ---- | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | ---- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | ---- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | ---- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | | CPT032_BH11_140119_1.5 | CPT036B_BH12_140119_0.2 | CPT036B_BH12_140119_1.5 | ---- | ---- |
|--|--------------|------|-------|--------------------|---------|---------|------------------------|-------------------------|-------------------------|-------|-------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 14-Jan-2019 15:00 | 14-Jan-2019 15:00 | 14-Jan-2019 15:00 | ---- | ---- |
| Compound | Method | LOR | Unit | | □□□□ □□ | □□□□ □□ | EM1900402-030 | EM1900402-033 | EM1900402-036 | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 5 | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 100 | <0.5 | <0.5 | <0.5 | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | <0.05 | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 10 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 650 | <10 | <10 | <10 | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 10000 | <50 | 130 | <50 | ---- | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT032_BH11
140119_1.5 | CPT036B_BH1
2_140119_0.2 | CPT036B_BH1
2_140119_1.5 | ---- | ---- | | |
|--|--------------|------|---------|--------------------|--------|---------------------------|-----------------------------|-----------------------------|------|------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | Compound | Method | | | | | | LOR | Unit |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.7 | 4.5 | 5.6 | ---- | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | 28 | 6 | <5 | ---- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | ---- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | <5 | <5 | <5 | ---- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 41 | 9 | 11 | ---- | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | ---- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 4 | <2 | 22 | ---- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | ---- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | ---- | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | ---- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | <5 | 11 | <5 | ---- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | 0.1 | <0.1 | 0.1 | ---- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | ---- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | <1 | <1 | ---- | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 240 | 150 | 120 | ---- | ---- | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | ---- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | ---- | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | ---- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | ---- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | ---- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | ---- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management
Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | | |
|---|--------------|------|-------|------------------|------|-------|------------------------|-------------------------|-------------------------|-------|-------|
| Sub-Matrix: SOIL | | | | Client sample ID | | | CPT032_BH11_140119_1.5 | CPT036B_BH12_140119_0.2 | CPT036B_BH12_140119_1.5 | ---- | ---- |
| Sampling date/time | | | | | | | 14-Jan-2019 15:00 | 14-Jan-2019 15:00 | 14-Jan-2019 15:00 | ---- | ---- |
| Compound | Method | LOR | Unit | | | | EM1900402-030 | EM1900402-033 | EM1900402-036 | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | 130 | <50 | <50 | ---- | ---- |

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900402 | Page | : 1 of 31 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 14-Jan-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 16-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 24-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : GIJPP | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 42 | | |
| No. of samples analysed | : 29 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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□□□ □□□ □□ □□ □

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Senior Acid Sulfate Soil Chemist
Senior Inorganic Chemist

Senior Organic Chemist

Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Sydney Organics, Smithfield, NSW
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2141924) | | | | | | | | | |
| EM1900400-014 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 8.0 | 8.1 | 1.24 | 0% - 20% |
| EM1900402-019 | QC150_140119 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.5 | 5.5 | 0.00 | 0% - 20% |
| EA029-A: pH Measurements (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | 3.9 | 4.0 | 2.53 | 0% - 20% |
| | | EA029: pH OX (23B) | ---- | 0.1 | pH Unit | 2.8 | 2.8 | 0.00 | 0% - 20% |
| EA029-B: Acidity Trail (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.410 | 0.423 | 3.28 | 0% - 20% |
| | | EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | 0.667 | 0.648 | 2.96 | 0% - 20% |
| | | EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | 0.258 | 0.224 | 13.8 | 0% - 50% |
| | | EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 256 | 264 | 3.28 | 0% - 20% |
| | | EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | 416 | 404 | 2.96 | 0% - 20% |
| | | EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | 161 | 140 | 13.8 | 0% - 20% |
| EA029-C: Sulfur Trail (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | 0.024 | 0.022 | 10.3 | No Limit |
| | | EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | 0.024 | 0.022 | 10.3 | No Limit |
| | | EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | 15 | 14 | 10.3 | No Limit |
| EA029-D: Calcium Values (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | 0.184 | 0.178 | 3.86 | No Limit |
| | | EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | 0.184 | 0.179 | 2.99 | No Limit |
| | | EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | <0.020 | 0.00 | No Limit |

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|-------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA029-D: Calcium Values (QC Lot: 2141431) - continued | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-E: Magnesium Values (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | 0.132 | 0.132 | 0.00 | No Limit |
| | | EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | 0.132 | 0.132 | 0.00 | No Limit |
| | | EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-H: Acid Base Accounting (QC Lot: 2141431) | | | | | | | | | |
| EB1900465-001 | Anonymous | EA029: ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 0.00 | No Limit |
| | | EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.43 | 0.44 | 2.56 | 0% - 20% |
| | | EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.43 | 0.44 | 2.56 | 0% - 20% |
| | | EA029: Liming Rate | ---- | 1 | kg CaCO3/t | 20 | 21 | 0.00 | 0% - 20% |
| | | EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 20 | 21 | 0.00 | 0% - 20% |
| | | EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 271 | 278 | 2.56 | 0% - 20% |
| | | EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 271 | 278 | 2.56 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2141434) | | | | | | | | | |
| EB1901039-010 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 7.5 | 7.4 | 1.34 | 0% - 20% |
| EM1900400-018 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 6.2 | 6.3 | 1.60 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2141435) | | | | | | | | | |
| EM1900402-036 | CPT036B_BH12_140119_1.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.02 | 0.03 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 14 | 17 | 18.4 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 5.4 | 5.2 | 3.77 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2141434) | | | | | | | | | |
| EB1901039-010 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.069 | 0.069 | 0.00 | 0% - 50% |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | 43 | 43 | 0.00 | No Limit |
| EM1900400-018 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | <0.005 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA033-B: Potential Acidity (QC Lot: 2141435) | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|-------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA033-B: Potential Acidity (QC Lot: 2141435) - continued | | | | | | | | | |
| EM1900402-036 | CPT036B_BH12_140119_1.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.006 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA033-C: Acid Neutralising Capacity (QC Lot: 2141434) | | | | | | | | | |
| EB1901039-010 | Anonymous | EA033: Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | 1.07 | 1.04 | 2.45 | 0% - 20% |
| | | EA033: sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | 0.34 | 0.33 | 0.00 | 0% - 20% |
| | | EA033: acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | 214 | 208 | 2.45 | 0% - 20% |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2143479) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EA055: Moisture Content | ---- | 0.1 | % | 11.5 | 10.5 | 8.45 | 0% - 50% |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EA055: Moisture Content | ---- | 0.1 | % | 26.3 | 24.7 | 6.19 | 0% - 20% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2143328) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 6 | 5 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 6 | 26.5 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 15 | 22 | 40.1 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 6 | 6 | 0.00 | No Limit |
| EM1900402-019 | QC150_140119 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 9 | 8 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 6 | <5 | 22.2 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 6 | 5 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2143329) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900402-019 | QC150_140119 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2145787) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2145787) - continued | | | | | | | | | |
| EM1900402-027 | CPT032_BH11_140119_0.2 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2145800) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | 1 | 1 | 0.00 | No Limit |
| EM1900402-027 | CPT032_BH11_140119_0.2 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2143626) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 160 | 210 | 25.9 | No Limit |
| EM1900402-027 | CPT032_BH11_140119_0.2 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 50 | 60 | 0.00 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2142793) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2139133) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2139133) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2139133) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2139133) - continued | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| | | EP074-UT: 1.1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1.2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.1.1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2142791) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2142791) - continued | | | | | | | | | |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2142791) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2142791) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2142791) - continued | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2142791) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|-------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2142791) - continued | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2139133) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2142792) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2139133) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|-------------------------|--|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2142792) | | | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | 140 | <100 | 33.8 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900402-030 | CPT032_BH11_140119_1.5 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2147724) | | | | | | | | | |
| EM1900402-007 | CPT001_BH109_140119_0.0 | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | 0.0005 | 0.0004 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| ES1901380-011 | Anonymous | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2147724) | | | | | | | | | |
| EM1900402-007 | CPT001_BH109_140119_0.0 | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | 0.00 | No Limit |
| ES1901380-011 | Anonymous | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|-------------------------|---|-------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2147724) - continued | | | | | | | | | |
| ES1901380-011 | Anonymous | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | 0.00 | No Limit |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2147724) | | | | | | | | | |
| EM1900402-007 | CPT001_BH109_140119_0.0 | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| ES1901380-011 | Anonymous | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2147724) | | | | | | | | | |
| EM1900402-007 | CPT001_BH109_140119_0.0 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2147724) - continued | | | | | | | | | |
| ES1901380-011 | Anonymous | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2138009) | | | | | | | | | |
| EM1900406-001 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 8.15 | 8.17 | 0.245 | 0% - 20% |
| EM1900416-008 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.12 | 7.03 | 1.27 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2138570) | | | | | | | | | |
| EM1900415-005 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.007 | 0.007 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900265-006 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.033 | 0.033 | 0.00 | 0% - 20% |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | 0.003 | 0.003 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.006 | 0.007 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.056 | 0.054 | 3.37 | 0% - 50% |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2138571) | | | | | | | | | |
| EM1900392-014 | Anonymous | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2138569) | | | | | | | | | |
| EM1900456-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900265-006 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2138324) | | | | | | | | | |
| EM1900392-014 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2138557) | | | | | | | | | |
| EM1900265-006 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EM1900452-029 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2138010) | | | | | | | | | |
| EM1900392-015 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900416-008 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.4 | 0.4 | 0.00 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2138302) | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2142592) | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2142592) | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2142592) | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2142592) | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2138301) | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2138301) - continued | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | | 205-82-3 | | | | | | |
| | | EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit | | |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2138300) | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2142591) | | | | | | | | | |
| EM1900448-026 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900402-025 | QC350_140119 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2138300) | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2142591) | | | | | | | | | |
| EM1900448-026 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900402-025 | QC350_140119 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2142591) | | | | | | | | | |
| EM1900448-026 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EM1900402-025 | QC350_140119 | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2147426) | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP231X-LL: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2147426) | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP231X-LL: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2147426) | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP231X-LL: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |

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 Work Order : EM1900402
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|-------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2147426) | | | | | | | | | |
| EM1900402-025 | QC350_140119 | EP231X-LL: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA029-A: pH Measurements (QCLot: 2141431) | | | | | | | | |
| EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA029: pH OX (23B) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA029-B: Acidity Trail (QCLot: 2141431) | | | | | | | | |
| EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 97.7 | 70 | 130 |
| EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | <2 | 29.1 mole H+ / t | 92.3 | 70 | 130 |
| EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | <2 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-C: Sulfur Trail (QCLot: 2141431) | | | | | | | | |
| EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | 0.052 % S | 93.8 | 70 | 130 |
| EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | <0.020 | 0.145 % S | 113 | 70 | 130 |
| EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029-D: Calcium Values (QCLot: 2141431) | | | | | | | | |
| EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | <0.020 | 0.151 % Ca | 114 | 70 | 130 |
| EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | <0.020 | 0.296 % Ca | 110 | 70 | 130 |
| EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-E: Magnesium Values (QCLot: 2141431) | | | | | | | | |
| EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | <0.020 | 0.176 % Mg | 110 | 70 | 130 |
| EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | <0.020 | 0.175 % Mg | 119 | 70 | 130 |
| EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | ---- | ---- | ---- | ---- |
| EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting (QCLot: 2141431) | | | | | | | | |
| EA029: ANC Fineness Factor | ---- | 0.5 | - | <0.5 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA033-A: Actual Acidity (QCLot: 2141434) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 95.1 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-A: Actual Acidity (QCLot: 2141435) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 89.1 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2141434) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 97.2 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2141435) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 93.4 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-C: Acid Neutralising Capacity (QCLot: 2141434) | | | | | | | | |
| EA033: Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | <0.01 | 10 % CaCO3 | 103 | 70 | 130 |
| EA033: acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033: sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | <0.01 | ---- | ---- | ---- | ---- |
| EA033-C: Acid Neutralising Capacity (QCLot: 2141435) | | | | | | | | |
| EA033: Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | <0.01 | 10 % CaCO3 | 103 | 70 | 130 |
| EA033: acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033: sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | <0.01 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES (QCLot: 2143328) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 90.7 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 85.8 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 91.8 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 88.8 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 81.7 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 92.1 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 97.0 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 96.0 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 89.6 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 93.7 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2143329) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 94.6 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2145787) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 101 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145800) | | | | | | | | |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145800) - continued | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 97.4 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2143626) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 100 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2142793) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 117 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2139133) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 83.8 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 74.5 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 71.5 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 71.5 | 66 | 115 |
| | 106-42-3 | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | # 68.7 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 68.9 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2139133) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 91.9 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2139133) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 86.2 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 76.7 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 78.1 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 74.4 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 79.4 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 77.6 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 76.9 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 78.2 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.6 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 78.9 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 83.9 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 71.7 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 84.1 | 71 | 118 |
| EP074-UT: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 75.8 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 80.0 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.3 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 80.6 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 85.0 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 77.3 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2142791) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 110 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2.7 mg/kg | 95.8 | 55 | 128 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2142791) - continued | | | | | | | | |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2.7 mg/kg | 98.0 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2.7 mg/kg | 104 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2.7 mg/kg | 102 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2.7 mg/kg | 102 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 124 | 65 | 124 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 5.4 mg/kg | 96.3 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 5.4 mg/kg | 97.0 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2142791) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 117 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 125 | 65 | 126 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 123 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2.7 mg/kg | 97.4 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 120 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 142 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 16.2 mg/kg | 103 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 16.2 mg/kg | 120 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 16.2 mg/kg | 105 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 123 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2142791) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2.7 mg/kg | 100.0 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 128 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2.7 mg/kg | 104 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2.7 mg/kg | 100.0 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2.7 mg/kg | 97.1 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 67.7 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2.7 mg/kg | 99.2 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2.7 mg/kg | 103 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2.7 mg/kg | 102 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2.7 mg/kg | 111 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 5.4 mg/kg | 104 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2.7 mg/kg | 102 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 130 | 72 | 134 |
| EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 130 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 132 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2142791) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2.7 mg/kg | 91.0 | 71 | 122 |



Sub-Matrix: **SOIL**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-------------|--------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EP075I: Organochlorine Pesticides (QCLot: 2142791) - continued | | | | | | | | |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 111 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2.7 mg/kg | 96.9 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 123 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2.7 mg/kg | 97.9 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2.7 mg/kg | 94.0 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 121 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 122 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 119 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 121 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 114 | 64 | 137 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 130 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 127 | 72 | 132 |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 119 | 42 | 160 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 136 | 55 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 2.7 mg/kg | 100 | 73 | 132 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 2.7 mg/kg | 109 | 75 | 134 |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 132 | 73 | 133 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 2.7 mg/kg | 120 | 67 | 133 |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 2.7 mg/kg | 107 | 67 | 135 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2139133) | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 81.6 | 63 | 122 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2142792) | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 108 | 70 | 120 |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 110 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 111 | 77 | 117 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2139133) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 80.1 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2142792) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 105 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 112 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 108 | 68 | 124 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2147724) | | | | | | | | |
| EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 105 | 57 | 121 |
| EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 105 | 55 | 125 |
| EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 109 | 52 | 126 |
| EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 84.4 | 54 | 123 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|--------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2147724) - continued | | | | | | | | |
| EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 77.6 | 55 | 127 |
| EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 78.0 | 54 | 125 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2147724) | | | | | | | | |
| EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | 0.00625 mg/kg | 99.0 | 52 | 128 |
| EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 119 | 54 | 129 |
| EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 107 | 58 | 127 |
| EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 119 | 57 | 128 |
| EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 90.8 | 60 | 134 |
| EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 109 | 63 | 130 |
| EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 110 | 55 | 130 |
| EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 118 | 62 | 130 |
| EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 117 | 53 | 134 |
| EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 90.8 | 49 | 129 |
| EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 99.0 | 59 | 129 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2147724) | | | | | | | | |
| EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 82.0 | 52 | 132 |
| EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 99.5 | 65 | 126 |
| EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 92.1 | 64 | 126 |
| EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 74.5 | 63 | 124 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 82.2 | 58 | 125 |
| EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 69.6 | 61 | 130 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 88.4 | 55 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2147724) | | | | | | | | |
| EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 109 | 54 | 130 |
| EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 98.0 | 61 | 130 |
| EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 110 | 62 | 130 |
| EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 114 | 60 | 130 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|--------|------|-----------------------------|---------------------------------------|--------------------|---------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | LCS | Low |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2138570) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 100 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 94.5 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 93.1 | 82 | 103 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2138570) - continued | | | | | | | | |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 94.6 | 83 | 105 |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 98.2 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 94.6 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 103 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 97.4 | 83 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 106 | 85 | 109 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2138571) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 101 | 84 | 116 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2138569) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 87.0 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2138324) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 98.2 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2138557) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 98.1 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2138010) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 90.8 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2138302) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 102 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2142592) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 100 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2142592) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 95.7 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 96.7 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 107 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 87.6 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 94.5 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 82.2 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 73.2 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 95.9 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 92.4 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 100 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 91.5 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 81.6 | 76 | 112 |
| EP074: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 101 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 97.0 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2142592) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 97.5 | 81 | 116 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|--|----------------------|------|------|---------------------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| | | | | | | | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2142592) - continued | | | | | | | | |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 94.0 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 95.0 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 98.2 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2142592) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 95.0 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2138301) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 82.5 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 83.5 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 78.9 | 53 | 117 |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 79.8 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 86.4 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 86.5 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 73.4 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 71.7 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 72.2 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 66.8 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2
205-82-3 | 1 | µg/L | <1.0 | 5 µg/L | 108 | 56 | 131 |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 111 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 111 | 54 | 124 |
| EP075(SIM): Indeno(1,2,3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 89.5 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 88.1 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 90.3 | 56 | 124 |
| EP075A: Phenolic Compounds (QCLot: 2147660) | | | | | | | | |
| EP075: Phenol | 108-95-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 2-Methylphenol | 95-48-7 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 3- & 4-Methylphenol | 1319-77-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 2-Nitrophenol | 88-75-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Pentachlorophenol | 87-86-5 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147660) | | | | | | | | |
| EP075: Naphthalene | 91-20-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147660) - continued | | | | | | | | |
| EP075: 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Acenaphthylene | 208-96-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Acenaphthene | 83-32-9 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Fluorene | 86-73-7 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Phenanthrene | 85-01-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Anthracene | 120-12-7 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Fluoranthene | 206-44-0 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Pyrene | 129-00-0 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Benz(a)anthracene | 56-55-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Chrysene | 218-01-9 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- |
| EP075: 7,12-Dimethylbenz(a)anthracene | 57-97-6 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Benzo(a)pyrene | 50-32-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Indeno(1,2,3-cd)pyrene | 193-39-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Dibenzo(a,h)anthracene | 53-70-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Benzo(g,h,i)perylene | 191-24-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides (QCLot: 2147660) | | | | | | | | |
| EP075: alpha-BHC | 319-84-6 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: beta-BHC | 319-85-7 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: gamma-BHC | 58-89-9 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: delta-BHC | 319-86-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Heptachlor | 76-44-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Aldrin | 309-00-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Heptachlor epoxide | 1024-57-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: alpha-Endosulfan | 959-98-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 4,4'-DDE | 72-55-9 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Dieldrin | 60-57-1 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Endrin | 72-20-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: beta-Endosulfan | 33213-65-9 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 4,4'-DDD | 72-54-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: Endosulfan sulfate | 1031-07-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- |
| EP075: 4,4'-DDT | 50-29-3 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2138300) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 90.2 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 93.8 | 55 | 132 |

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-------|------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | LCS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2138300) - continued | | | | | | | | |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 92.7 | 55 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2142591) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 91.2 | 65 | 126 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2138300) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 90.9 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 93.7 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 94.2 | 53 | 136 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2142591) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 92.7 | 64 | 124 |
| EP080: BTEXN (QCLot: 2142591) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 99.0 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 93.1 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 96.4 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 93.6 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 97.9 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 100 | 70 | 125 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2147426) | | | | | | | | |
| EP231X-LL: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 94.2 | 50 | 130 |
| EP231X-LL: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 105 | 50 | 130 |
| EP231X-LL: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 105 | 50 | 130 |
| EP231X-LL: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 110 | 50 | 130 |
| EP231X-LL: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 97.6 | 50 | 130 |
| EP231X-LL: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 51.2 | 40 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2147426) | | | | | | | | |
| EP231X-LL: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.01 | µg/L | <0.01 | 0.25 µg/L | 96.9 | 50 | 130 |
| EP231X-LL: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 104 | 50 | 130 |
| EP231X-LL: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 110 | 50 | 130 |
| EP231X-LL: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 111 | 50 | 130 |
| EP231X-LL: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 108 | 50 | 130 |
| EP231X-LL: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 101 | 50 | 130 |
| EP231X-LL: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 79.8 | 50 | 130 |
| EP231X-LL: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 73.4 | 40 | 130 |
| EP231X-LL: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 48.2 | 40 | 130 |
| EP231X-LL: Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 47.6 | 40 | 130 |
| EP231X-LL: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 55.2 | 40 | 130 |
| EP231X-LL: Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 83.2 | 50 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2147426) | | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|-------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2147426) - continued | | | | | | | | |
| EP231X-LL: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 68.6 | 40 | 130 |
| EP231X-LL: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 53.4 | 40 | 130 |
| EP231X-LL: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 52.2 | 40 | 130 |
| EP231X-LL: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 68.1 | 50 | 130 |
| EP231X-LL: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 54.4 | 40 | 130 |
| EP231X-LL: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 59.0 | 50 | 130 |
| EP231X-LL: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 67.2 | 40 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2147426) | | | | | | | | |
| EP231X-LL: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 118 | 50 | 130 |
| EP231X-LL: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 115 | 50 | 130 |
| EP231X-LL: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 112 | 50 | 130 |
| EP231X-LL: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 55.0 | 50 | 130 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------------|-----------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2143328) | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 87.2 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 93.8 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 95.9 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 99.0 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 96.3 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 94.7 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 75.8 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 91.7 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2143329) | | | | | | | |
| EM1900402-001 | CPT029_BH10_140119_0.0 | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 91.9 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2145787) | | | | | | | |
| EM1900402-003 | CPT029_BH10_140119_0.9 | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | 82.4 | 58 | 114 |

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|-------------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145800) | | | | | | | |
| EM1900402-003 | CPT029_BH10_140119_0.9 | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 98.9 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2143626) | | | | | | | |
| EM1900402-003 | CPT029_BH10_140119_0.9 | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 93.8 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2142793) | | | | | | | |
| EM1900402-008 | CPT001_BH109_140119_0.5 | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 118 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2139133) | | | | | | | |
| EM1900402-003 | CPT029_BH10_140119_0.9 | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 76.1 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 78.3 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2139133) | | | | | | | |
| EM1900402-003 | CPT029_BH10_140119_0.9 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 81.1 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 75.5 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 81.6 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2142791) | | | | | | | |
| EM1900402-003 | CPT029_BH10_140119_0.9 | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 117 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 128 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 44.0 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2142791) | | | | | | | |
| EM1900402-003 | CPT029_BH10_140119_0.9 | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 131 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 95.2 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2142791) | | | | | | | |
| EM1900402-003 | CPT029_BH10_140119_0.9 | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 110 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 104 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2139133) | | | | | | | |
| EM1900402-003 | CPT029_BH10_140119_0.9 | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 72.0 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2142792) | | | | | | | |
| EM1900402-007 | CPT001_BH109_140119_0.0 | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 109 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 113 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 110 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2139133) | | | | | | | |
| EM1900402-003 | CPT029_BH10_140119_0.9 | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 69.3 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2142792) | | | | | | | |
| EM1900402-007 | CPT001_BH109_140119_0.0 | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 108 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 112 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 112 | 44 | 126 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2147724) | | | | | | | |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|-------------------------|---|-------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2147724) - continued | | | | | | | |
| EM1900402-007 | CPT001_BH109_140119_0.0 | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.00125 mg/kg | 118 | 50 | 130 |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.00125 mg/kg | 101 | 50 | 130 |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.00125 mg/kg | 112 | 50 | 130 |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.00125 mg/kg | 92.8 | 50 | 130 |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.00125 mg/kg | 78.0 | 50 | 130 |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.00125 mg/kg | 78.8 | 50 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2147724) | | | | | | | |
| EM1900402-007 | CPT001_BH109_140119_0.0 | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.00625 mg/kg | 100 | 30 | 130 |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.00125 mg/kg | 124 | 50 | 130 |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.00125 mg/kg | 116 | 50 | 130 |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.00125 mg/kg | 120 | 50 | 130 |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.00125 mg/kg | 105 | 50 | 130 |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.00125 mg/kg | 122 | 50 | 130 |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.00125 mg/kg | 124 | 50 | 130 |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.00125 mg/kg | 121 | 50 | 130 |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.00125 mg/kg | 121 | 50 | 130 |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.00125 mg/kg | 98.8 | 30 | 130 |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.00312 mg/kg | 89.4 | 30 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2147724) | | | | | | | |
| EM1900402-007 | CPT001_BH109_140119_0.0 | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.00125 mg/kg | 99.6 | 50 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.00312 mg/kg | 75.5 | 30 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.00312 mg/kg | 70.2 | 30 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.00312 mg/kg | 64.4 | 30 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.00312 mg/kg | 84.0 | 30 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.00125 mg/kg | 88.8 | 30 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.00125 mg/kg | 92.0 | 30 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2147724) | | | | | | | |
| EM1900402-007 | CPT001_BH109_140119_0.0 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.00125 mg/kg | 122 | 50 | 130 |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.00125 mg/kg | 124 | 50 | 130 |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.00125 mg/kg | 116 | 50 | 130 |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.00125 mg/kg | 115 | 50 | 130 |

Sub-Matrix: **WATER**

| Matrix Spike (MS) Report | | |
|--------------------------|------------------|---------------------|
| Spike | SpikeRecovery(%) | Recovery Limits (%) |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2138570) | | | | | | | |
| EM1900265-006 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 106 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 94.3 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 102 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 93.4 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 103 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 103 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2138569) | | | | | | | |
| EM1900392-014 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 87.5 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2138324) | | | | | | | |
| EM1900392-015 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 103 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2138557) | | | | | | | |
| EM1900392-014 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 109 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2138010) | | | | | | | |
| EM1900416-003 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 87.4 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2138302) | | | | | | | |
| EM1900402-039 | QC311_140119 | EP066: Total Polychlorinated biphenyls | ---- | 10 µg/L | 86.8 | 47 | 137 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2142592) | | | | | | | |
| EM1900402-039 | QC311_140119 | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 112 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 87.3 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2142592) | | | | | | | |
| EM1900402-039 | QC311_140119 | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 97.2 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2142591) | | | | | | | |
| EM1900402-039 | QC311_140119 | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 79.0 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2142591) | | | | | | | |
| EM1900402-039 | QC311_140119 | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 79.2 | 44 | 122 |
| EP080: BTEXN (QCLot: 2142591) | | | | | | | |
| EM1900402-039 | QC311_140119 | EP080: Benzene | 71-43-2 | 20 µg/L | 103 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 96.2 | 72 | 132 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2147426) | | | | | | | |
| EP1900379-004 | Anonymous | EP231X-LL: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.05 µg/L | 76.4 | 50 | 130 |
| | | EP231X-LL: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.05 µg/L | 80.2 | 50 | 130 |
| | | EP231X-LL: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.05 µg/L | 80.0 | 50 | 130 |
| | | EP231X-LL: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.05 µg/L | 93.4 | 50 | 130 |
| | | EP231X-LL: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.05 µg/L | 82.2 | 50 | 130 |
| | | EP231X-LL: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.05 µg/L | 53.6 | 30 | 130 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--|-------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2147426) | | | | | | | |
| EP1900379-004 | Anonymous | EP231X-LL: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.25 µg/L | 81.6 | 30 | 130 |
| | | EP231X-LL: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.05 µg/L | 86.8 | 50 | 130 |
| | | EP231X-LL: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.05 µg/L | 94.2 | 50 | 130 |
| | | EP231X-LL: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.05 µg/L | 93.2 | 50 | 130 |
| | | EP231X-LL: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.05 µg/L | 82.6 | 50 | 130 |
| | | EP231X-LL: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.05 µg/L | 82.6 | 50 | 130 |
| | | EP231X-LL: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.05 µg/L | 63.0 | 50 | 130 |
| | | EP231X-LL: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.05 µg/L | 59.4 | 30 | 130 |
| | | EP231X-LL: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.05 µg/L | 47.2 | 30 | 130 |
| | | EP231X-LL: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.05 µg/L | 41.0 | 30 | 130 |
| | | EP231X-LL: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.125 µg/L | 49.9 | 30 | 130 |
| | | EP231X-LL: Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.05 µg/L | 72.8 | 30 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2147426) | | | | | | | |
| EP1900379-004 | Anonymous | EP231X-LL: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.05 µg/L | 64.0 | 30 | 130 |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.125 µg/L | 52.2 | 30 | 130 |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.125 µg/L | 46.9 | 30 | 130 |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.125 µg/L | 55.8 | 30 | 130 |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.125 µg/L | 49.9 | 30 | 130 |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.05 µg/L | 49.6 | 30 | 130 |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.05 µg/L | 51.6 | 30 | 130 |
| | | EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2147426) | | | | | |
| EP1900379-004 | Anonymous | EP231X-LL: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 µg/L | 97.0 | 50 | 130 |
| | | EP231X-LL: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 µg/L | 112 | 50 | 130 |
| | | EP231X-LL: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 µg/L | 92.2 | 50 | 130 |
| | | EP231X-LL: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 µg/L | 58.4 | 50 | 130 |

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|---------------------------|-------------------------|------------------------------------|
| Work Order | : EM1900402 | Page | : 1 of 18 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 14-Jan-2019 |
| Site | : GIJPP | Issue Date | : 24-Jan-2019 |
| Sampler | : [REDACTED] | No. of samples received | : 42 |
| Order number | : | No. of samples analysed | : 29 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Matrix Spike outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|---------|------------|--------|---------|--|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | QC-2139133-001 | ---- | Styrene | 100-42-5 | 68.7 % | 71-115% | Recovery less than lower control limit |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|----------------------------------|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural | | | | | | |
| QC350_140119, | | | | | | |
| QC311_140119 | ---- | ---- | ---- | 16-Jan-2019 | 14-Jan-2019 | 2 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|----------------------------------|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 1 | 17 | 5.88 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | 0 | 4 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 1 | 18 | 5.56 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | |
| Semivolatile Organic Compounds | 0 | 4 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 17 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | 0 | 4 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 18 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---------------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| Container / Client Sample ID(s) | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 18-Jan-2019 | 21-Jan-2019 | ✓ | 18-Jan-2019 | 18-Jan-2019 | ✓ |
| EA029-A: pH Measurements | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT029_BH10_140119_0.4, | CPT029_BH10_140119_0.9 | 14-Jan-2019 | 18-Jan-2019 | 09-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-B: Acidity Trail | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT029_BH10_140119_0.4, | CPT029_BH10_140119_0.9 | 14-Jan-2019 | 18-Jan-2019 | 09-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-C: Sulfur Trail | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT029_BH10_140119_0.4, | CPT029_BH10_140119_0.9 | 14-Jan-2019 | 18-Jan-2019 | 09-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-D: Calcium Values | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT029_BH10_140119_0.4, | CPT029_BH10_140119_0.9 | 14-Jan-2019 | 18-Jan-2019 | 09-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-E: Magnesium Values | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT029_BH10_140119_0.4, | CPT029_BH10_140119_0.9 | 14-Jan-2019 | 18-Jan-2019 | 09-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-F: Excess Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT029_BH10_140119_0.4, | CPT029_BH10_140119_0.9 | 14-Jan-2019 | 18-Jan-2019 | 09-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-G: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT029_BH10_140119_0.4, | CPT029_BH10_140119_0.9 | 14-Jan-2019 | 18-Jan-2019 | 09-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA029-H: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT029_BH10_140119_0.4, | CPT029_BH10_140119_0.9 | 14-Jan-2019 | 18-Jan-2019 | 09-Oct-2021 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT001_BH109_140119_0.9,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.5,
CPT036B_BH12_140119_0.5, | CPT001_BH109_140119_1.4,
CPT001_BH108_140119_1.4,
CPT039_BH13_140119_1.4,
CPT032_BH11_140119_1.0,
CPT036B_BH12_140119_1.5 | 14-Jan-2019 | 18-Jan-2019 | 14-Jan-2020 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 14-Jan-2019 | 18-Jan-2019 | 14-Jan-2020 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| CPT001_BH109_140119_0.9, | CPT001_BH109_140119_1.4, | | | | | | | |
| CPT001_BH108_140119_0.4, | CPT001_BH108_140119_1.4, | | | | | | | |
| CPT039_BH13_140119_0.4, | CPT039_BH13_140119_1.4, | | | | | | | |
| CPT032_BH11_140119_0.5, | CPT032_BH11_140119_1.0, | | | | | | | |
| CPT036B_BH12_140119_0.5, | CPT036B_BH12_140119_1.5 | | | | | | | |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 14-Jan-2019 | 18-Jan-2019 | 14-Jan-2020 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| CPT001_BH109_140119_0.9, | CPT001_BH109_140119_1.4, | | | | | | | |
| CPT001_BH108_140119_0.4, | CPT001_BH108_140119_1.4, | | | | | | | |
| CPT039_BH13_140119_0.4, | CPT039_BH13_140119_1.4, | | | | | | | |
| CPT032_BH11_140119_0.5, | CPT032_BH11_140119_1.0, | | | | | | | |
| CPT036B_BH12_140119_0.5, | CPT036B_BH12_140119_1.5 | | | | | | | |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 14-Jan-2019 | 18-Jan-2019 | 14-Jan-2020 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| CPT001_BH109_140119_0.9, | CPT001_BH109_140119_1.4, | | | | | | | |
| CPT001_BH108_140119_0.4, | CPT001_BH108_140119_1.4, | | | | | | | |
| CPT039_BH13_140119_0.4, | CPT039_BH13_140119_1.4, | | | | | | | |
| CPT032_BH11_140119_0.5, | CPT032_BH11_140119_1.0, | | | | | | | |
| CPT036B_BH12_140119_0.5, | CPT036B_BH12_140119_1.5 | | | | | | | |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 14-Jan-2019 | 18-Jan-2019 | 14-Jan-2020 | ✓ | 18-Jan-2019 | 18-Apr-2019 | ✓ |
| CPT001_BH109_140119_0.9, | CPT001_BH109_140119_1.4, | | | | | | | |
| CPT001_BH108_140119_0.4, | CPT001_BH108_140119_1.4, | | | | | | | |
| CPT039_BH13_140119_0.4, | CPT039_BH13_140119_1.4, | | | | | | | |
| CPT032_BH11_140119_0.5, | CPT032_BH11_140119_1.0, | | | | | | | |
| CPT036B_BH12_140119_0.5, | CPT036B_BH12_140119_1.5 | | | | | | | |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055) | | 14-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 28-Jan-2019 | ✓ |
| CPT029_BH10_140119_0.0, | CPT029_BH10_140119_0.9, | | | | | | | |
| CPT001_BH109_140119_0.0, | CPT001_BH109_140119_0.5, | | | | | | | |
| CPT001_BH108_140119_0.0, | CPT001_BH108_140119_0.4, | | | | | | | |
| CPT039_BH13_140119_0.0, | CPT039_BH13_140119_0.4, | | | | | | | |
| QC150_140119, | CPT032_BH11_140119_0.2, | | | | | | | |
| CPT032_BH11_140119_1.5, | CPT036B_BH12_140119_0.2, | | | | | | | |
| CPT036B_BH12_140119_1.5 | | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|---|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 21-Jan-2019 | 13-Jul-2019 | ✔ | 21-Jan-2019 | 13-Jul-2019 | ✔ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 21-Jan-2019 | 11-Feb-2019 | ✔ | 22-Jan-2019 | 11-Feb-2019 | ✔ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 21-Jan-2019 | 11-Feb-2019 | ✔ | 21-Jan-2019 | 28-Jan-2019 | ✔ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 21-Jan-2019 | 28-Jan-2019 | ✔ | 22-Jan-2019 | 04-Feb-2019 | ✔ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T) | | | | | | | | |
| CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 21-Jan-2019 | 11-Feb-2019 | ✔ | 22-Jan-2019 | 11-Feb-2019 | ✔ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM) | | | | | | | | |
| CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✔ | 22-Jan-2019 | 27-Feb-2019 | ✔ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | | | | | | | |
| CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 17-Jan-2019 | 21-Jan-2019 | ✔ | 18-Jan-2019 | 21-Jan-2019 | ✔ |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | | | | | | | |
| CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 17-Jan-2019 | 21-Jan-2019 | ✔ | 18-Jan-2019 | 21-Jan-2019 | ✔ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 17-Jan-2019 | 21-Jan-2019 | ✔ | 18-Jan-2019 | 21-Jan-2019 | ✔ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✔ | 22-Jan-2019 | 27-Feb-2019 | ✔ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✔ | 22-Jan-2019 | 27-Feb-2019 | ✔ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✔ | 22-Jan-2019 | 27-Feb-2019 | ✔ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✓ | 22-Jan-2019 | 27-Feb-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 17-Jan-2019 | 21-Jan-2019 | ✓ | 18-Jan-2019 | 21-Jan-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✓ | 22-Jan-2019 | 27-Feb-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 17-Jan-2019 | 21-Jan-2019 | ✓ | 18-Jan-2019 | 21-Jan-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT029_BH10_140119_0.0,
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0,
CPT039_BH13_140119_0.0,
QC150_140119,
CPT032_BH11_140119_1.5,
CPT036B_BH12_140119_1.5 | CPT029_BH10_140119_0.9,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT039_BH13_140119_0.4,
CPT032_BH11_140119_0.2,
CPT036B_BH12_140119_0.2, | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✓ | 22-Jan-2019 | 27-Feb-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0, | CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4 | 14-Jan-2019 | 22-Jan-2019 | 13-Jul-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0, | CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4 | 14-Jan-2019 | 22-Jan-2019 | 13-Jul-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0, | CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4 | 14-Jan-2019 | 22-Jan-2019 | 13-Jul-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0, | CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4 | 14-Jan-2019 | 22-Jan-2019 | 13-Jul-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP231P: PFAS Sums | | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT001_BH109_140119_0.0,
CPT001_BH108_140119_0.0, | CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4 | 14-Jan-2019 | 22-Jan-2019 | 13-Jul-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|--|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA005P: pH by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
QC350_140119, QC311_140119 | 14-Jan-2019 | ---- | ---- | ---- | 16-Jan-2019 | 14-Jan-2019 | ✖ | |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | |
| Clear Plastic Bottle - Natural (EG020B-F)
QC311_140119 | 14-Jan-2019 | ---- | ---- | ---- | 16-Jan-2019 | 13-Jul-2019 | ✔ | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F)
QC350_140119 | 14-Jan-2019 | ---- | ---- | ---- | 16-Jan-2019 | 13-Jul-2019 | ✔ | |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | |
| Clear Plastic Bottle - Natural (EG035F)
QC311_140119 | 14-Jan-2019 | ---- | ---- | ---- | 17-Jan-2019 | 11-Feb-2019 | ✔ | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
QC350_140119 | 14-Jan-2019 | ---- | ---- | ---- | 17-Jan-2019 | 11-Feb-2019 | ✔ | |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | |
| Opaque plastic bottle - NaOH (EG050F)
QC350_140119, QC311_140119 | 14-Jan-2019 | ---- | ---- | ---- | 16-Jan-2019 | 11-Feb-2019 | ✔ | |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Opaque plastic bottle - NaOH (EK026SF)
QC350_140119, | QC311_140119 | 14-Jan-2019 | ---- | ---- | ---- | 16-Jan-2019 | 28-Jan-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
QC350_140119, | QC311_140119 | 14-Jan-2019 | ---- | ---- | ---- | 16-Jan-2019 | 11-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
QC350_140119, | QC311_140119 | 14-Jan-2019 | 16-Jan-2019 | 21-Jan-2019 | ✓ | 21-Jan-2019 | 25-Feb-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC350_140119, | QC311_140119 | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✓ | 18-Jan-2019 | 28-Jan-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC350_140119, | QC311_140119 | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✓ | 18-Jan-2019 | 28-Jan-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC350_140119, | QC311_140119 | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✓ | 18-Jan-2019 | 28-Jan-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC350_140119, | QC311_140119 | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✓ | 18-Jan-2019 | 28-Jan-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
QC350_140119, | QC311_140119 | 14-Jan-2019 | 16-Jan-2019 | 21-Jan-2019 | ✓ | 21-Jan-2019 | 25-Feb-2019 | ✓ |
| EP075A: Phenolic Compounds | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
QC350_140119, | QC311_140119 | 14-Jan-2019 | 16-Jan-2019 | 21-Jan-2019 | ✓ | 22-Jan-2019 | 25-Feb-2019 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
QC350_140119, | QC311_140119 | 14-Jan-2019 | 16-Jan-2019 | 21-Jan-2019 | ✓ | 22-Jan-2019 | 25-Feb-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
QC350_140119, | QC311_140119 | 14-Jan-2019 | 16-Jan-2019 | 21-Jan-2019 | ✓ | 22-Jan-2019 | 25-Feb-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC350_140119, | QC311_140119 | 14-Jan-2019 | 16-Jan-2019 | 21-Jan-2019 | ✓ | 21-Jan-2019 | 25-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC550_140119,
QC350_140119,
QC311_140119,
QC518_140119, | QC551_140119,
QC450_140119,
QC411_140119,
QC519_140119, | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✓ | 18-Jan-2019 | 28-Jan-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071) | | | | | | | | |
| QC350_140119, | QC311_140119 | 14-Jan-2019 | 16-Jan-2019 | 21-Jan-2019 | ✓ | 21-Jan-2019 | 25-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080) | | | | | | | | |
| QC550_140119, | QC551_140119, | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✓ | 18-Jan-2019 | 28-Jan-2019 | ✓ |
| QC350_140119, | QC450_140119, | | | | | | | |
| QC311_140119, | QC411_140119, | | | | | | | |
| QC518_140119, | QC519_140119 | | | | | | | |
| EP080: BTEXN | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080) | | | | | | | | |
| QC550_140119, | QC551_140119, | 14-Jan-2019 | 18-Jan-2019 | 28-Jan-2019 | ✓ | 18-Jan-2019 | 28-Jan-2019 | ✓ |
| QC350_140119, | QC450_140119, | | | | | | | |
| QC311_140119, | QC411_140119, | | | | | | | |
| QC518_140119, | QC519_140119 | | | | | | | |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL) | | | | | | | | |
| QC350_140119 | | 14-Jan-2019 | 22-Jan-2019 | 13-Jul-2019 | ✓ | 22-Jan-2019 | 13-Jul-2019 | ✓ |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL) | | | | | | | | |
| QC350_140119 | | 14-Jan-2019 | 22-Jan-2019 | 13-Jul-2019 | ✓ | 22-Jan-2019 | 13-Jul-2019 | ✓ |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL) | | | | | | | | |
| QC350_140119 | | 14-Jan-2019 | 22-Jan-2019 | 13-Jul-2019 | ✓ | 22-Jan-2019 | 13-Jul-2019 | ✓ |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL) | | | | | | | | |
| QC350_140119 | | 14-Jan-2019 | 22-Jan-2019 | 13-Jul-2019 | ✓ | 22-Jan-2019 | 13-Jul-2019 | ✓ |
| EP231P: PFAS Sums | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL) | | | | | | | | |
| QC350_140119 | | 14-Jan-2019 | 22-Jan-2019 | 13-Jul-2019 | ✓ | 22-Jan-2019 | 13-Jul-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 3 | 25 | 12.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 8 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 25 | 8.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 25 | 8.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 8 | 12.50 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 15 | 6.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 15 | 6.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 15 | 6.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 15 | 6.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 15 | 6.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 2 | 12 | 16.67 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 4 | 25.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 4 | 25.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 17 | 5.88 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS) | EP231X-LL | 1 | 3 | 33.33 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 0 | 4 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 10 | 20.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 18 | 5.56 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 12 | 16.67 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 6 | 16.67 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS) | EP231X-LL | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 0 | 4 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 10 | 10.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS) | EP231X-LL | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 10 | 10.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 17 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS) | EP231X-LL | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 0 | 4 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 10 | 10.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 18 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|---------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | SOIL | In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|---|
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | SOIL | In-House. A portion of soil is extracted with MTBE. The extract is taken to dryness, made up in mobile phase. Analysis is by LC/MSMS, ESI Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1 |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |

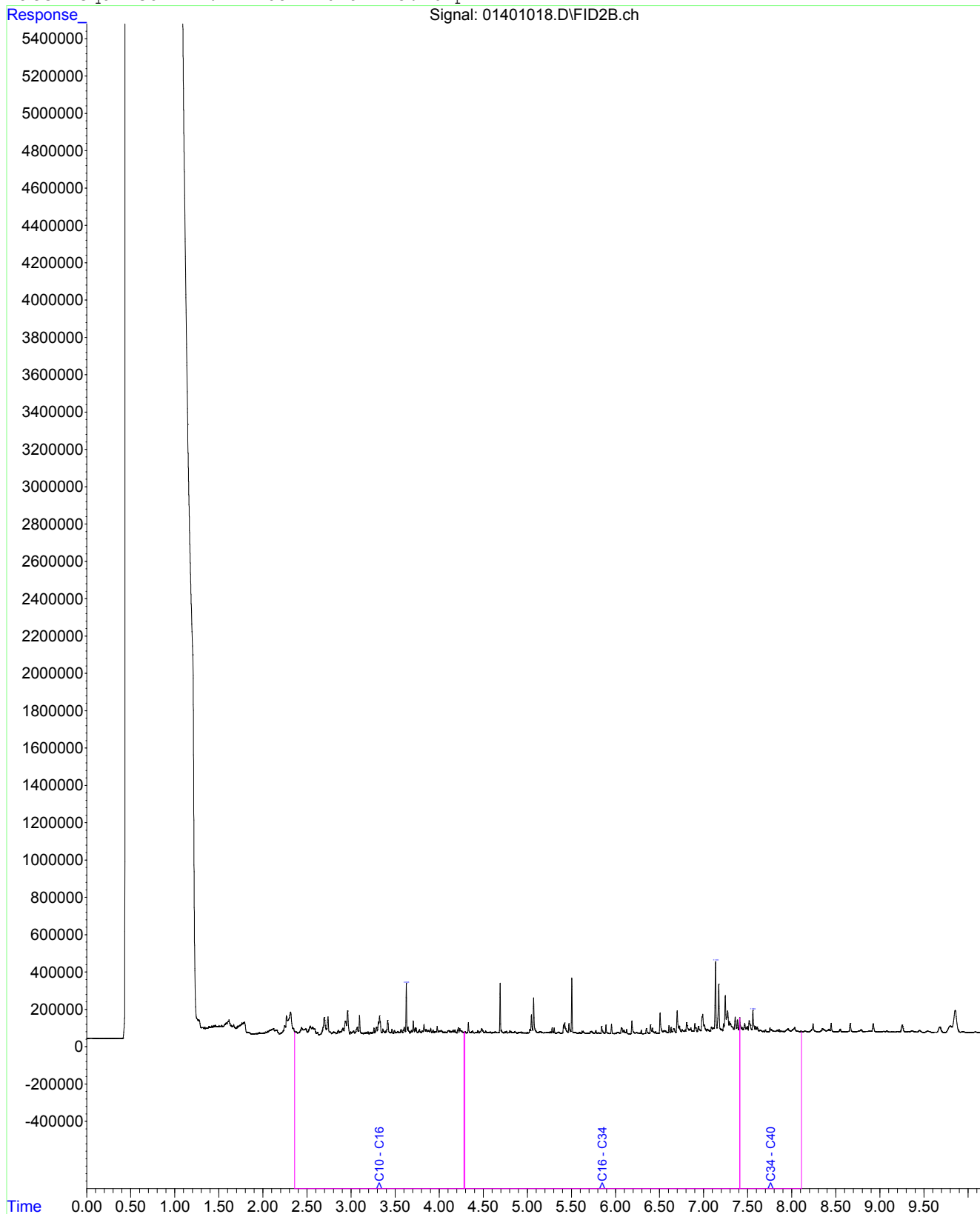


| Analytical Methods | Method | Matrix | Method Descriptions |
|--|------------|--------|--|
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazine. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds | EP075 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |

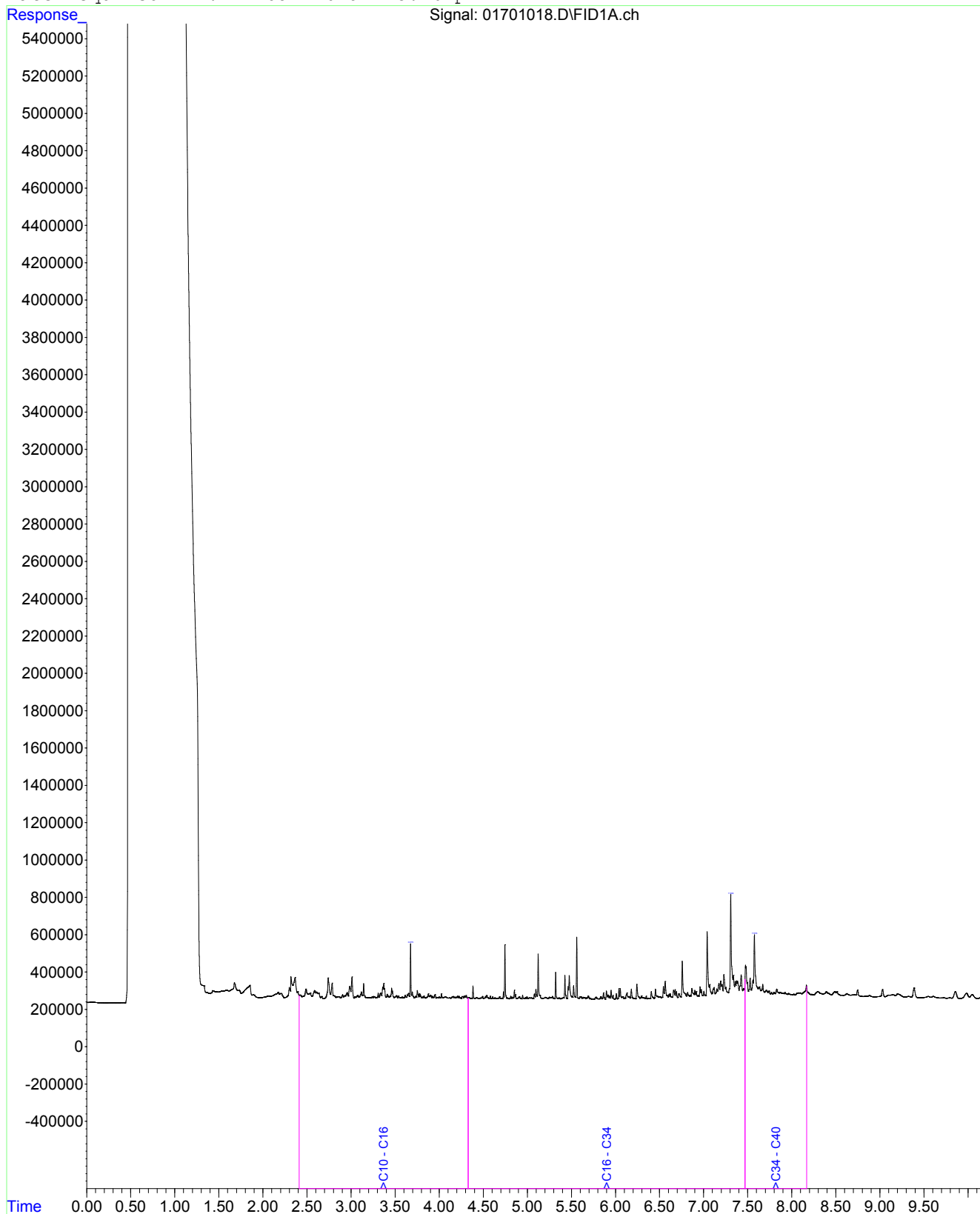


| Analytical Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|--|
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS) | EP231X-LL | WATER | In-house: Analysis of fresh and saline waters by solid phase extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1 |
| Preparation Methods | Method | Matrix | Method Descriptions |
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Sample Extraction for PFAS | EP231-PR | SOIL | In house |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |
| SPE preparation for LL and saline PFCs | EP231-SPE | WATER | In house |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

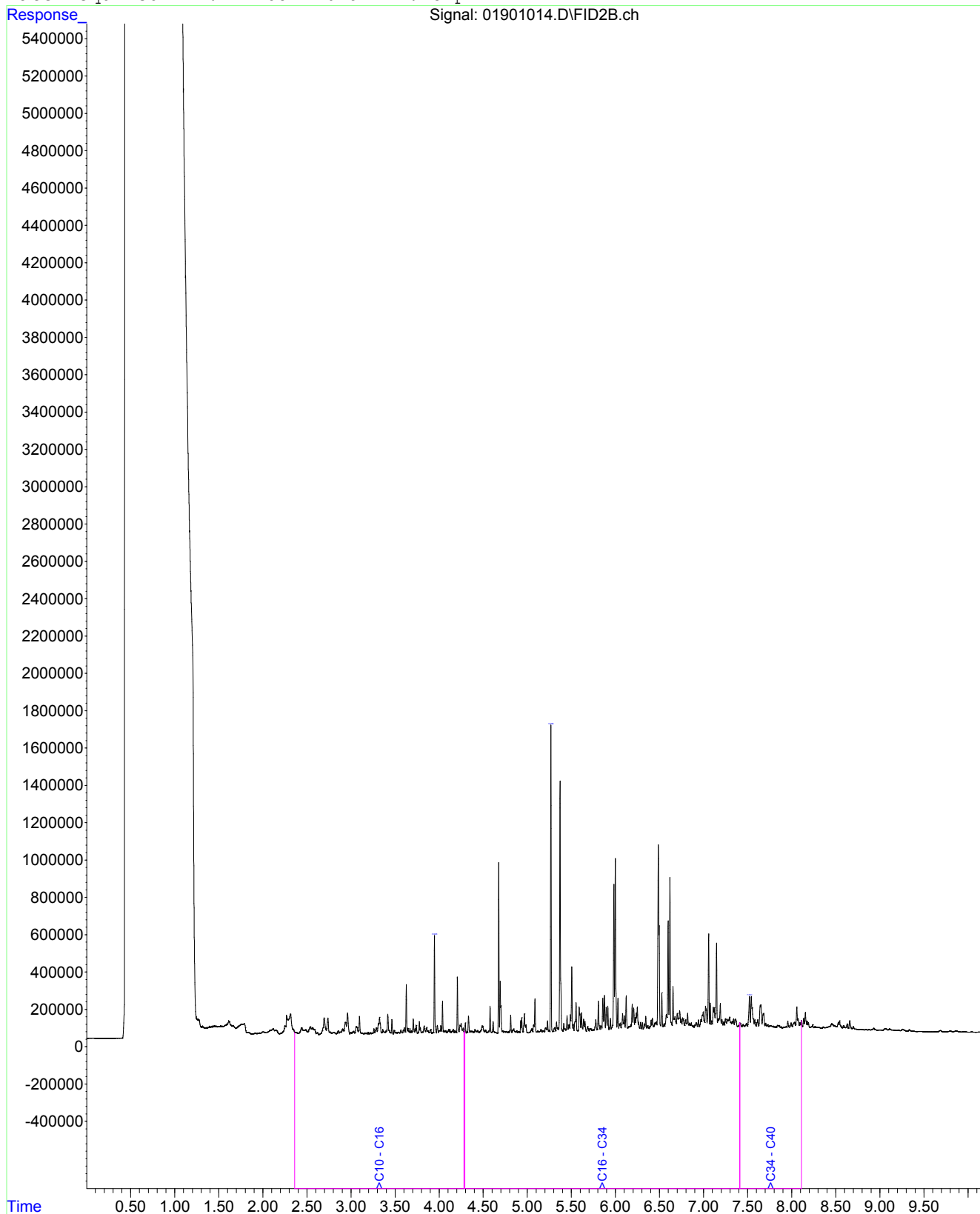
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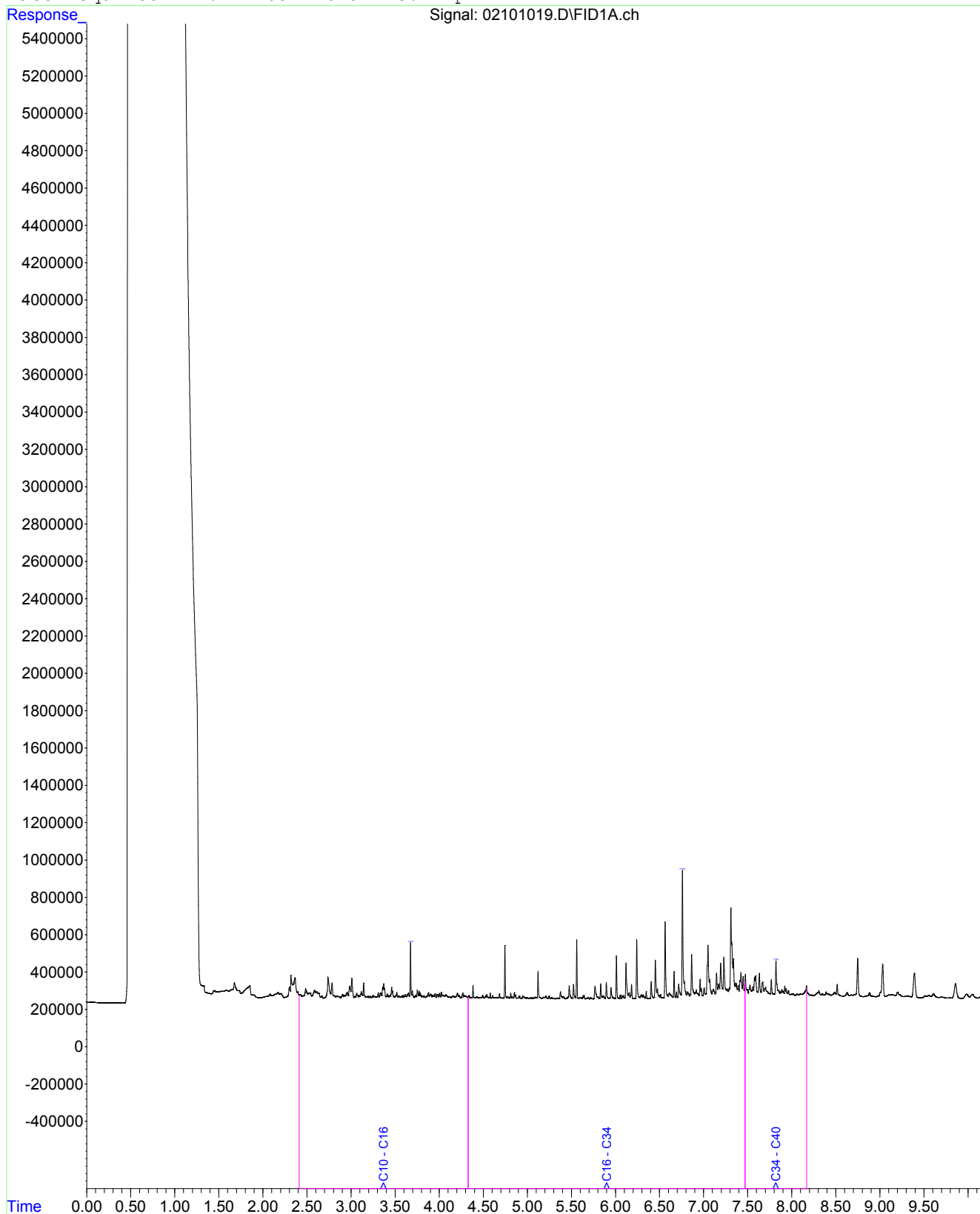
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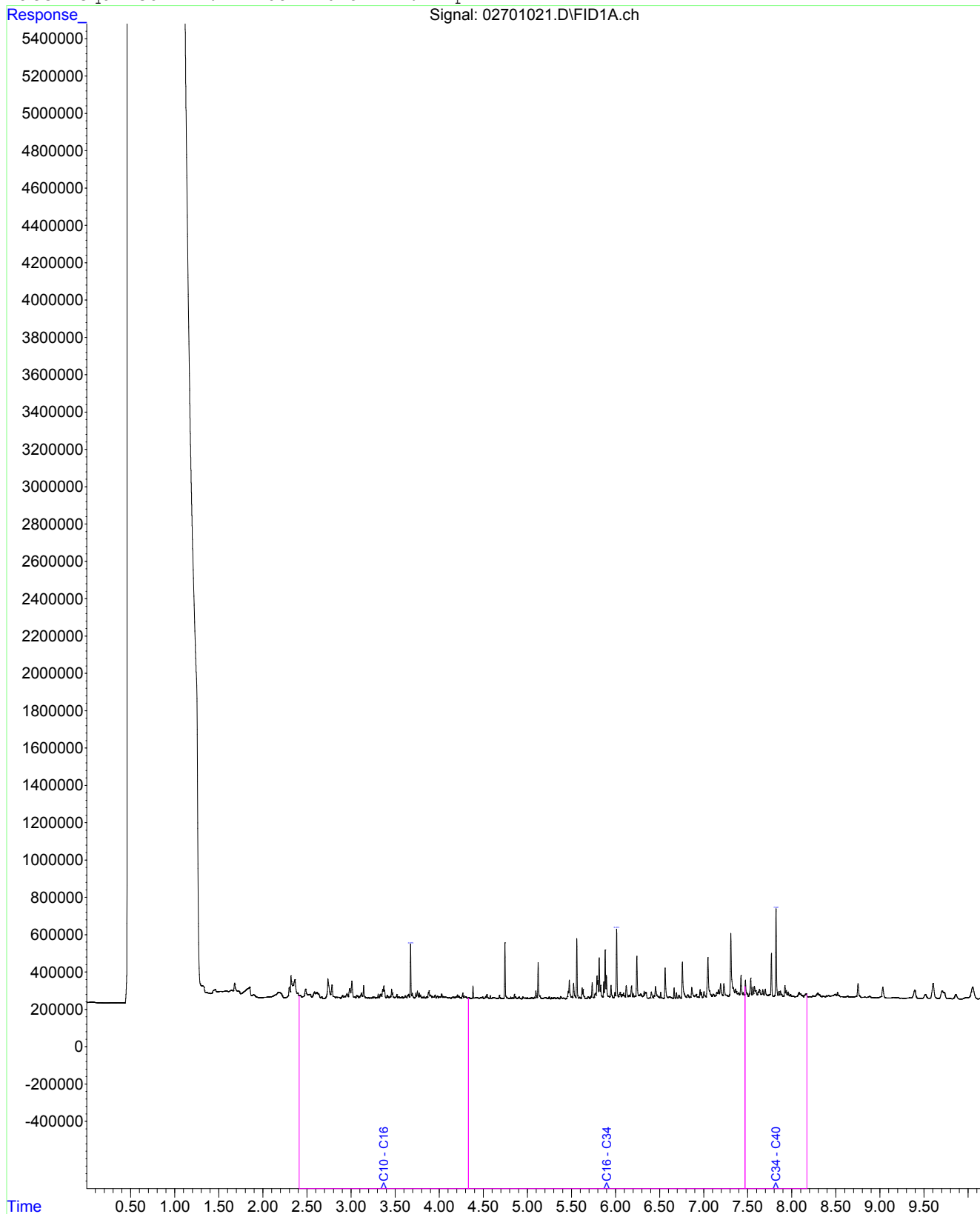
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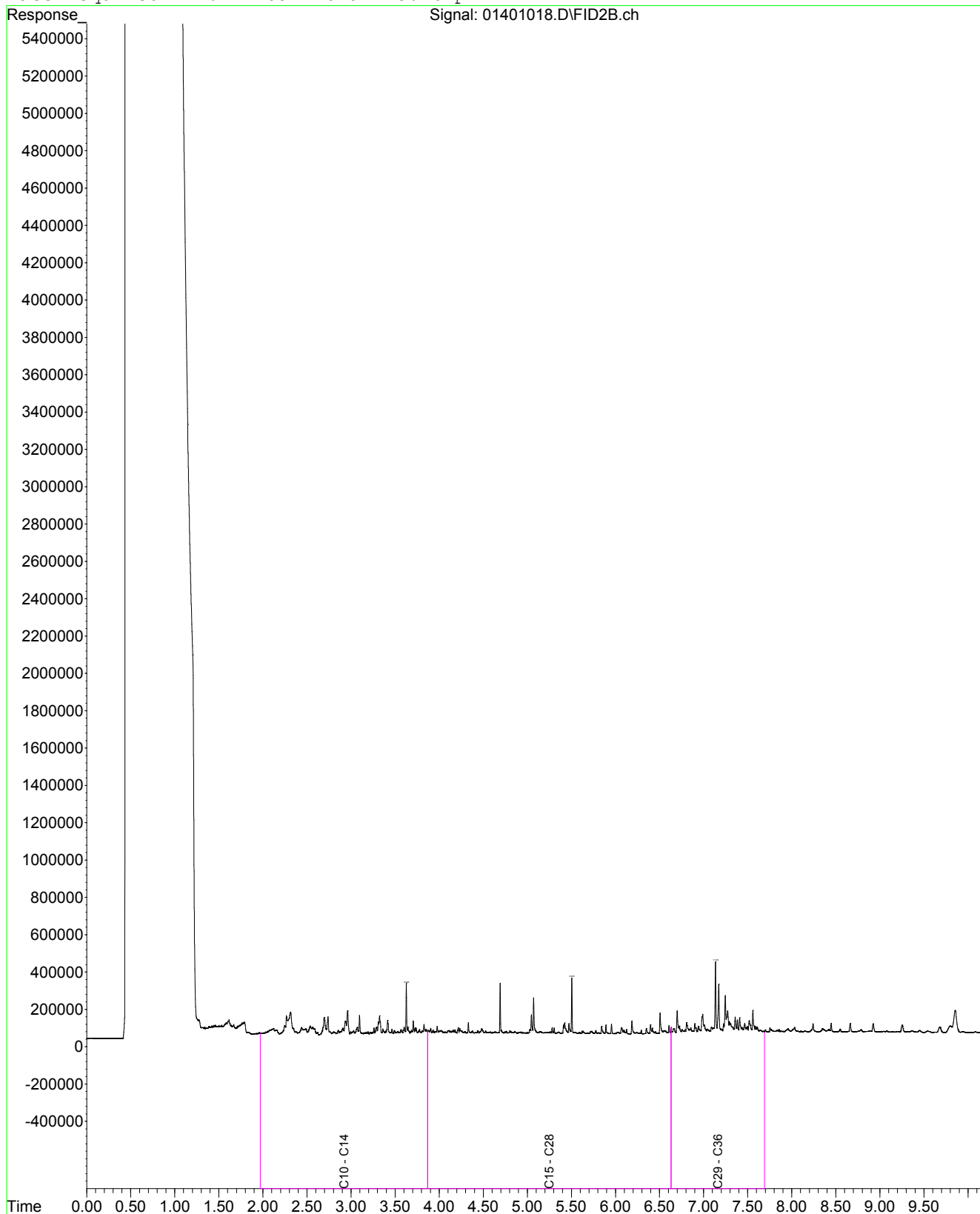
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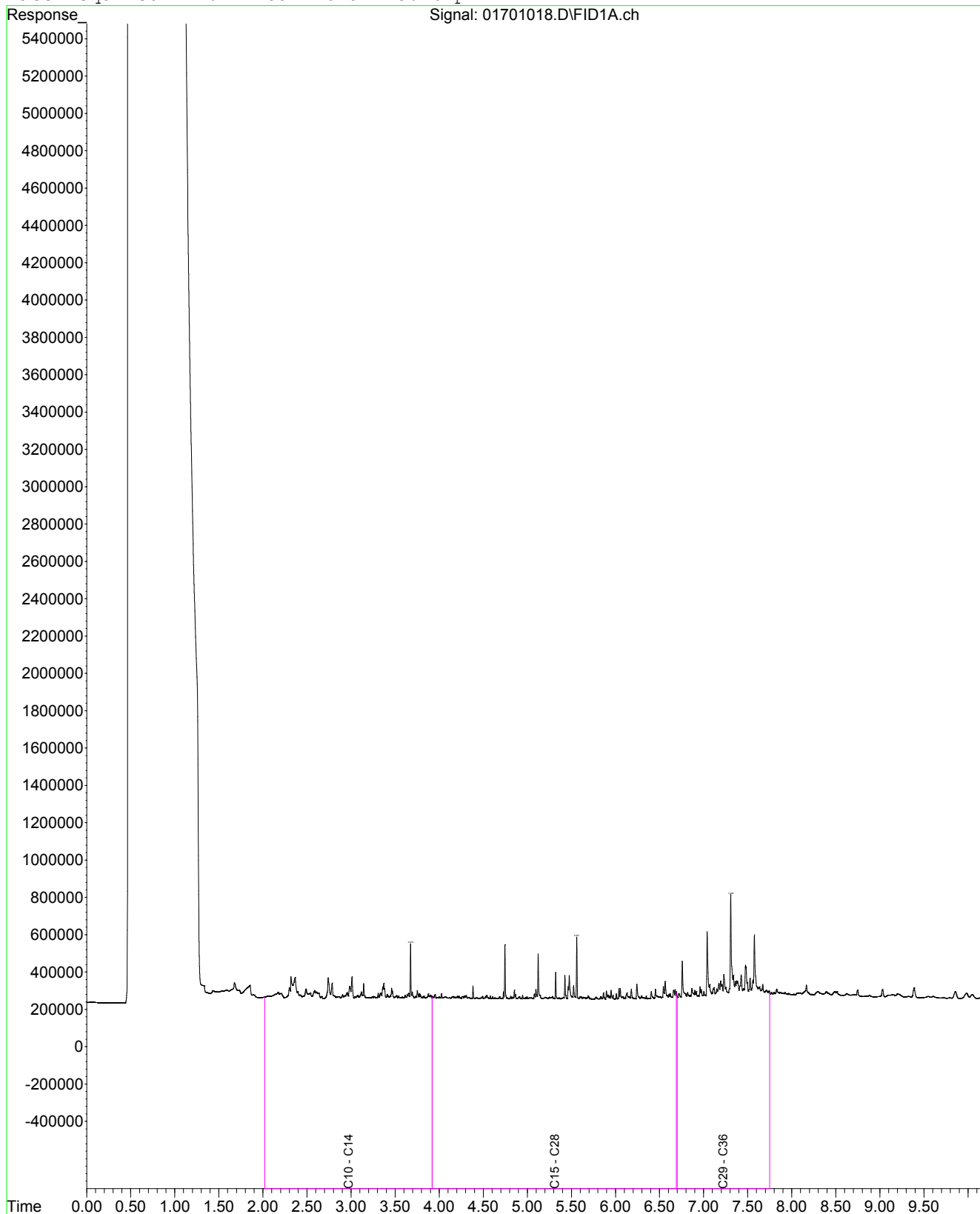
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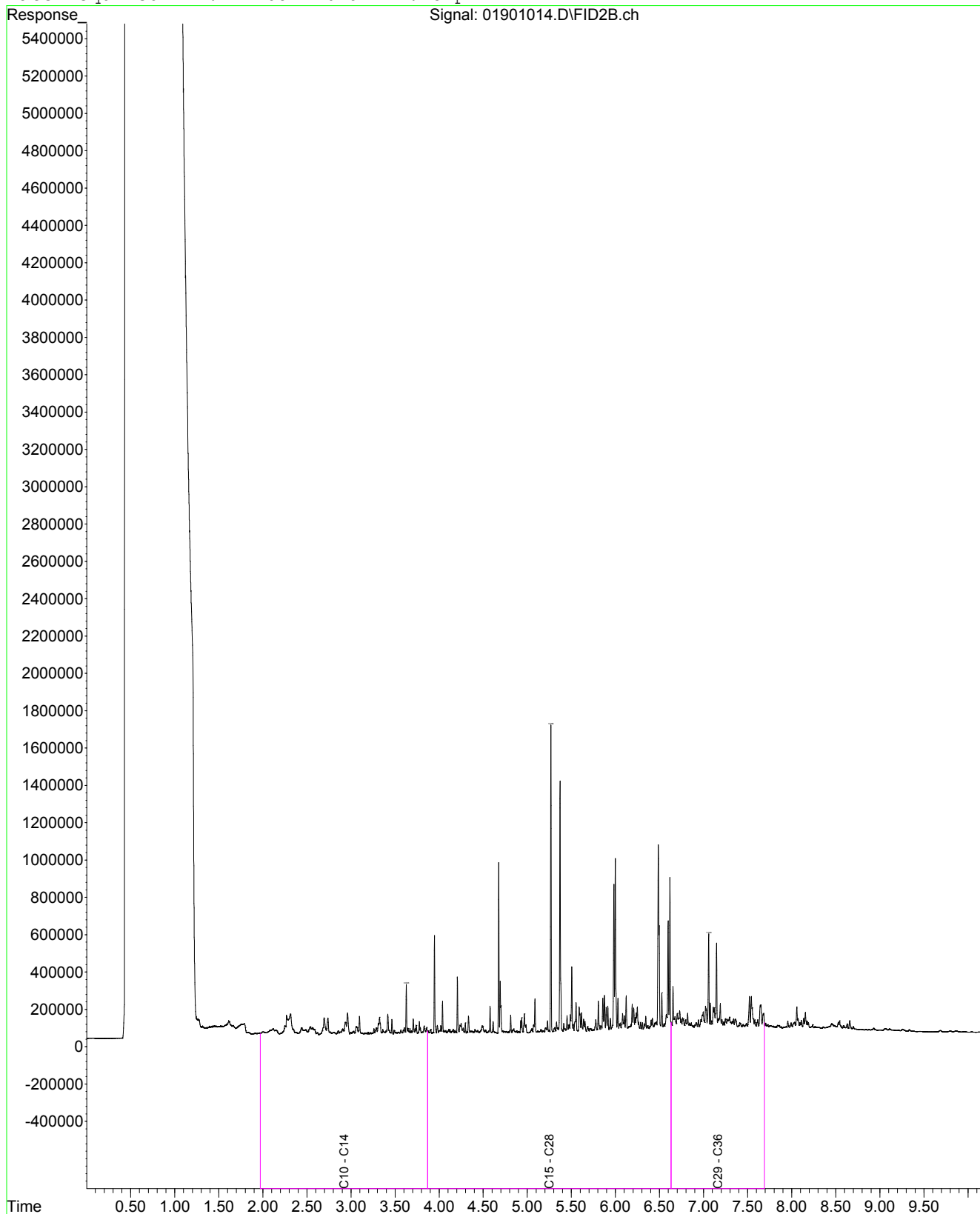
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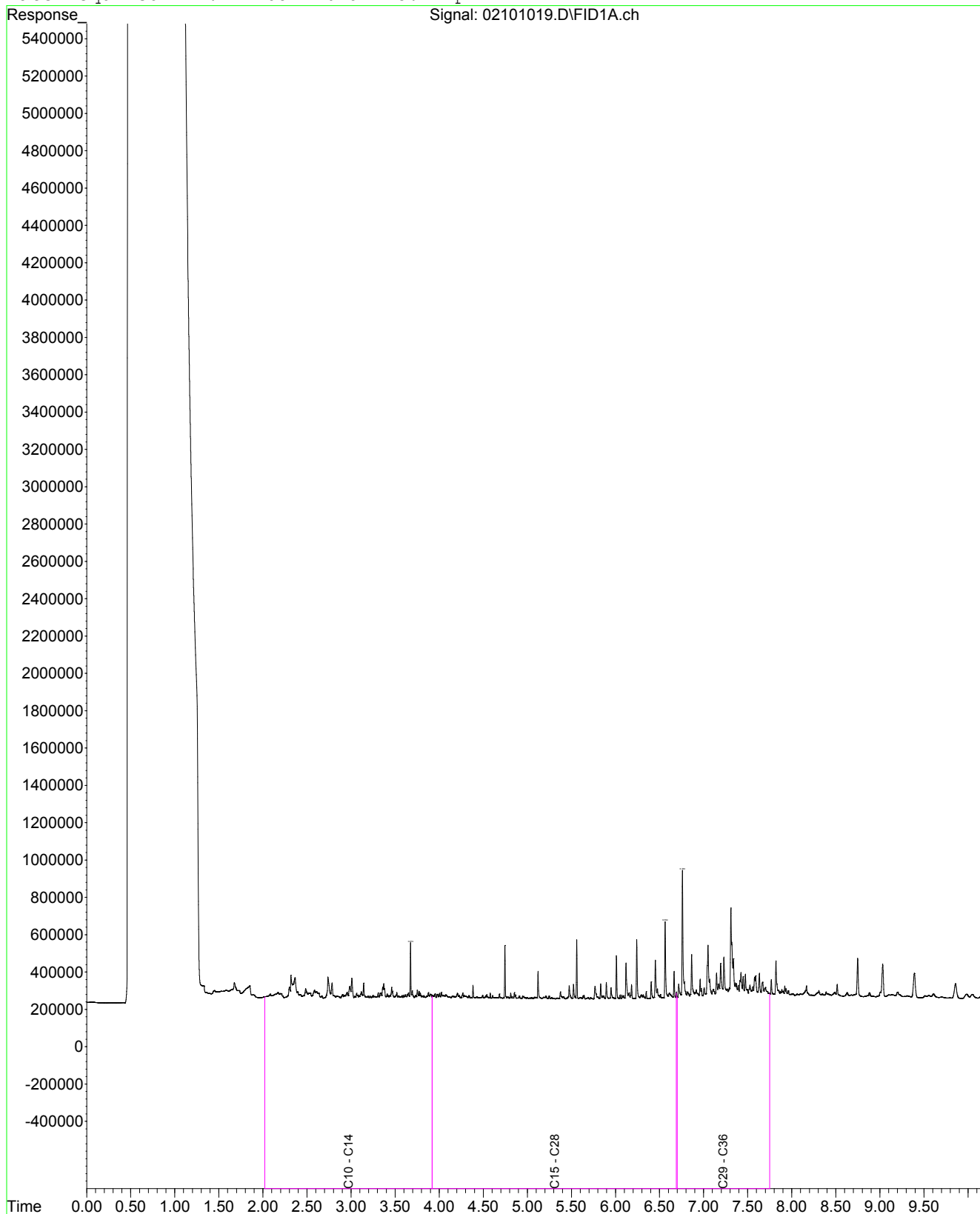
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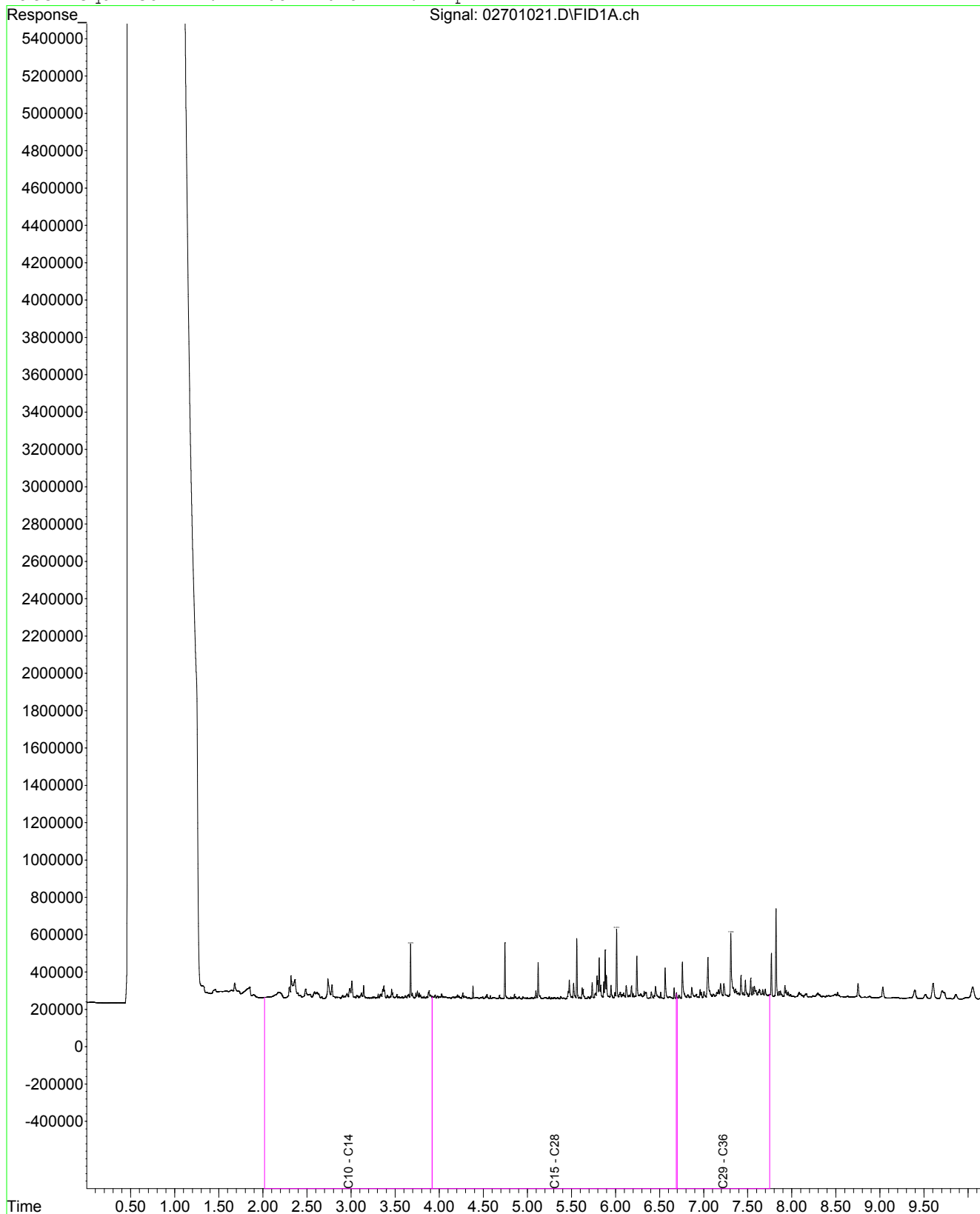
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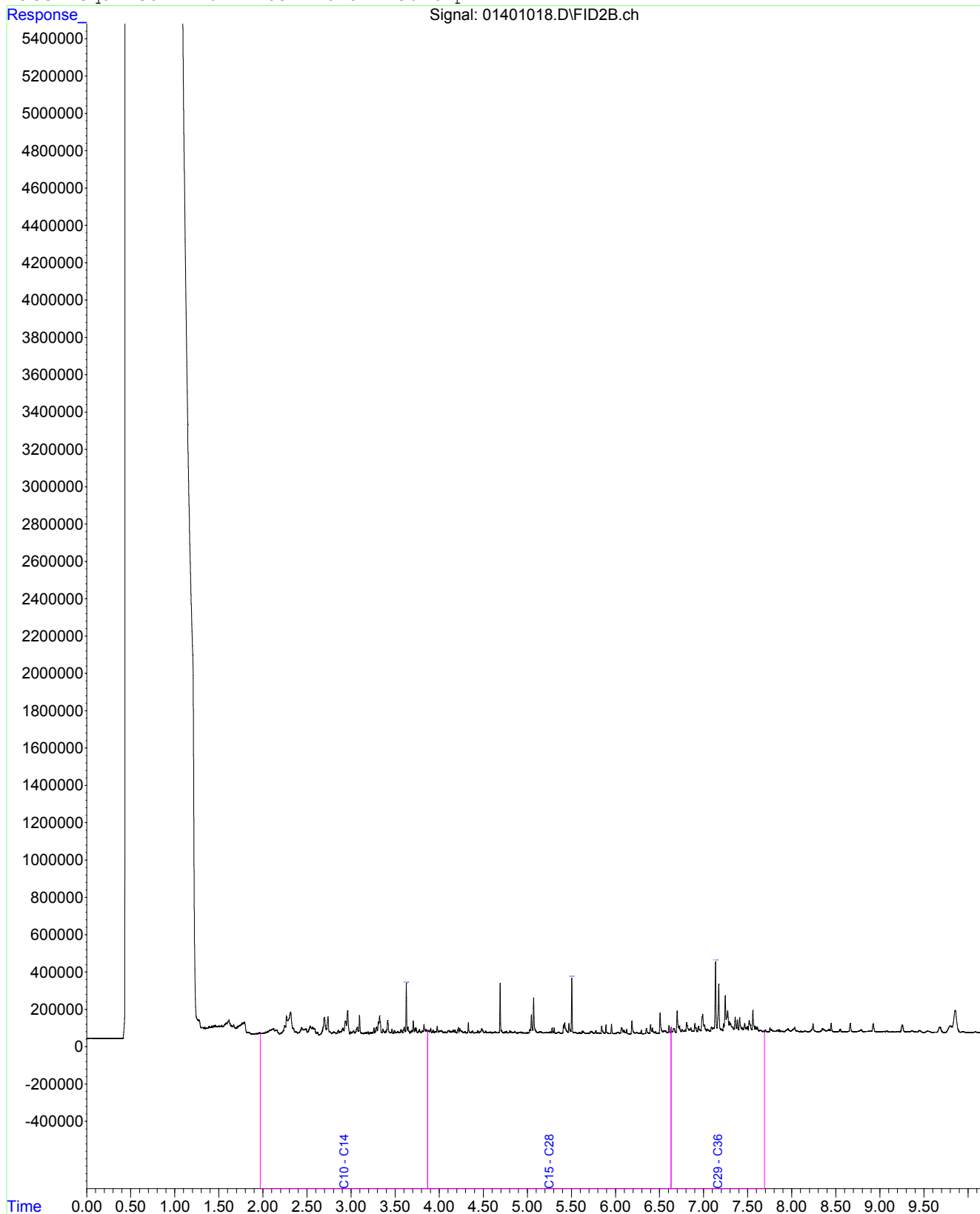
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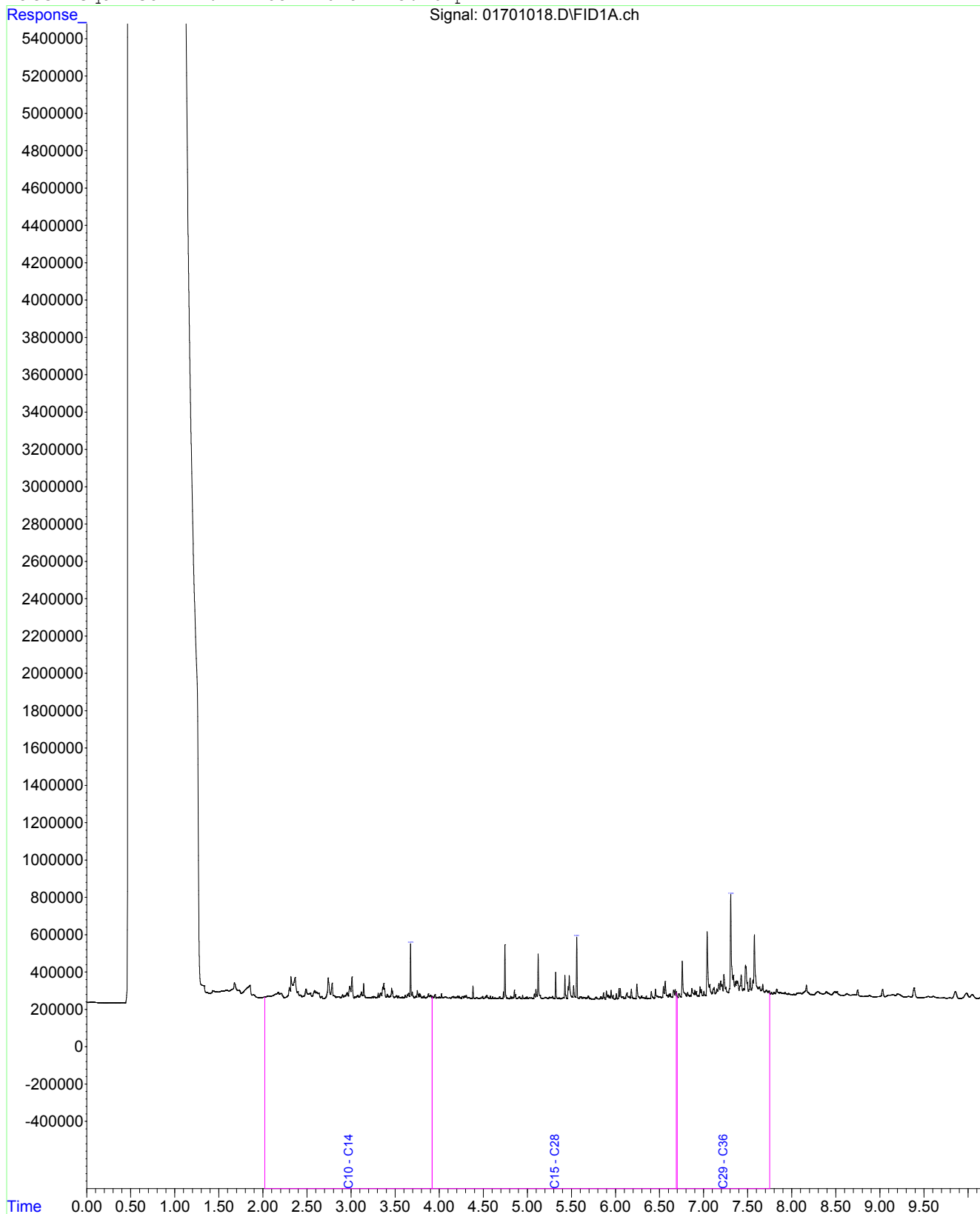
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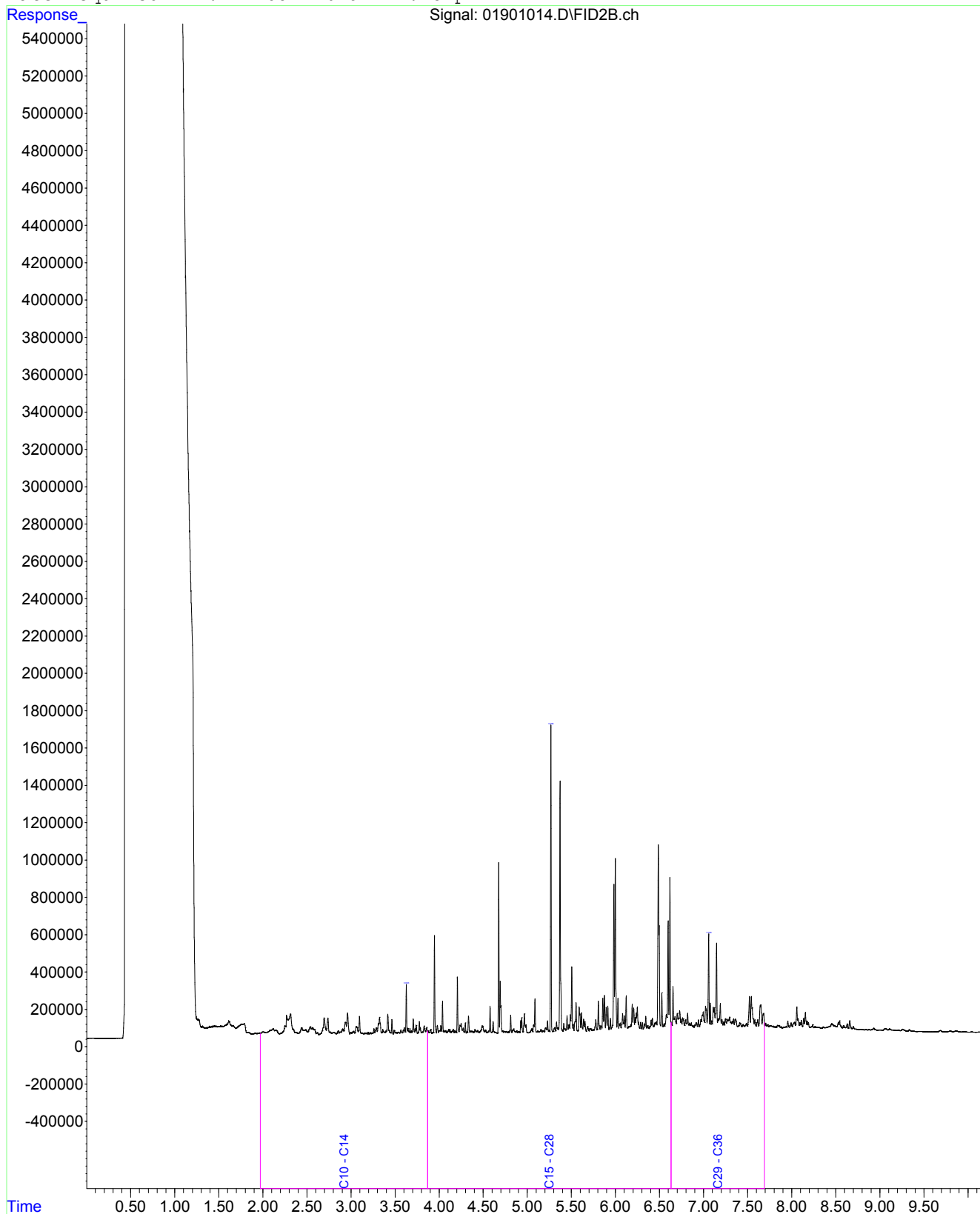
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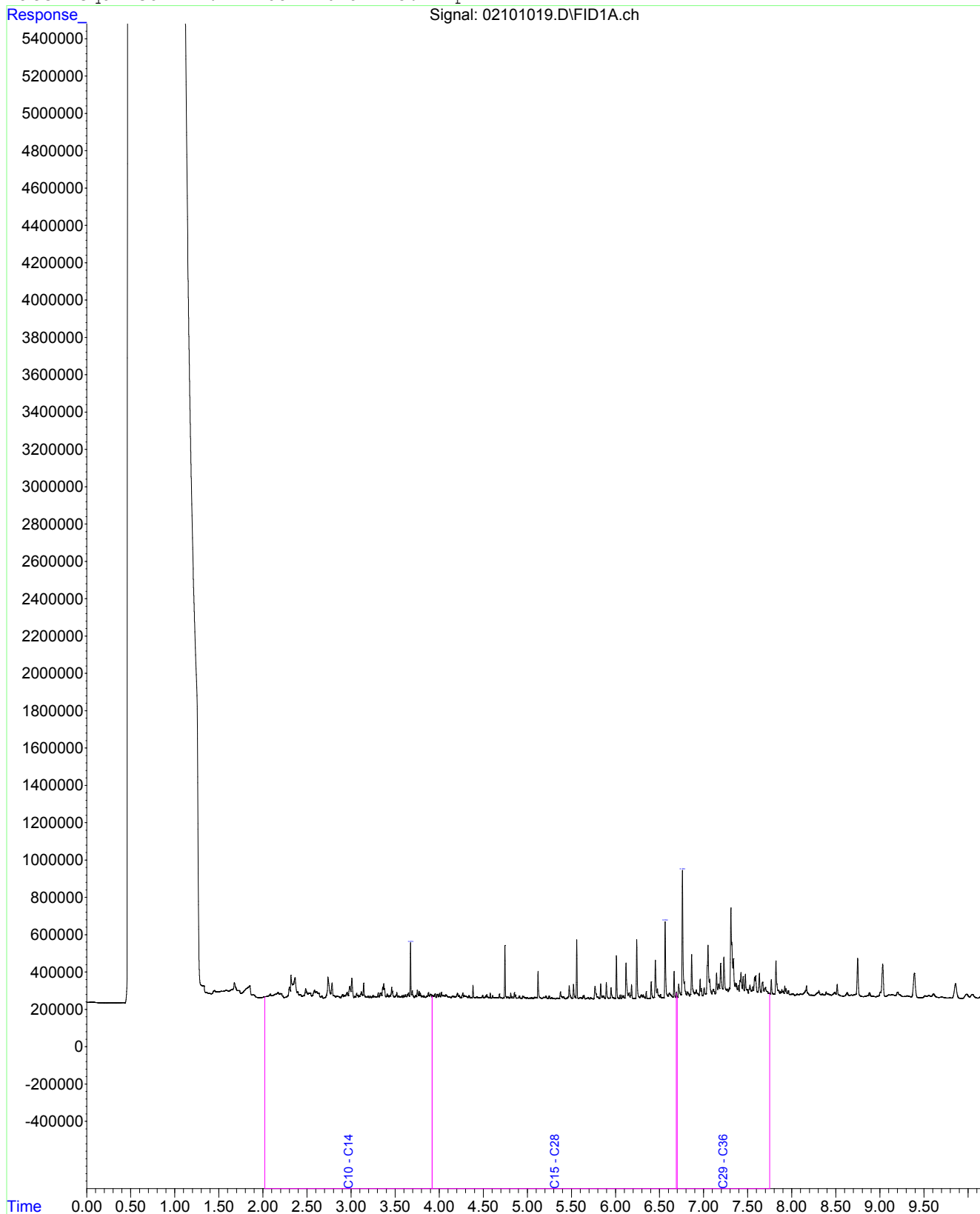
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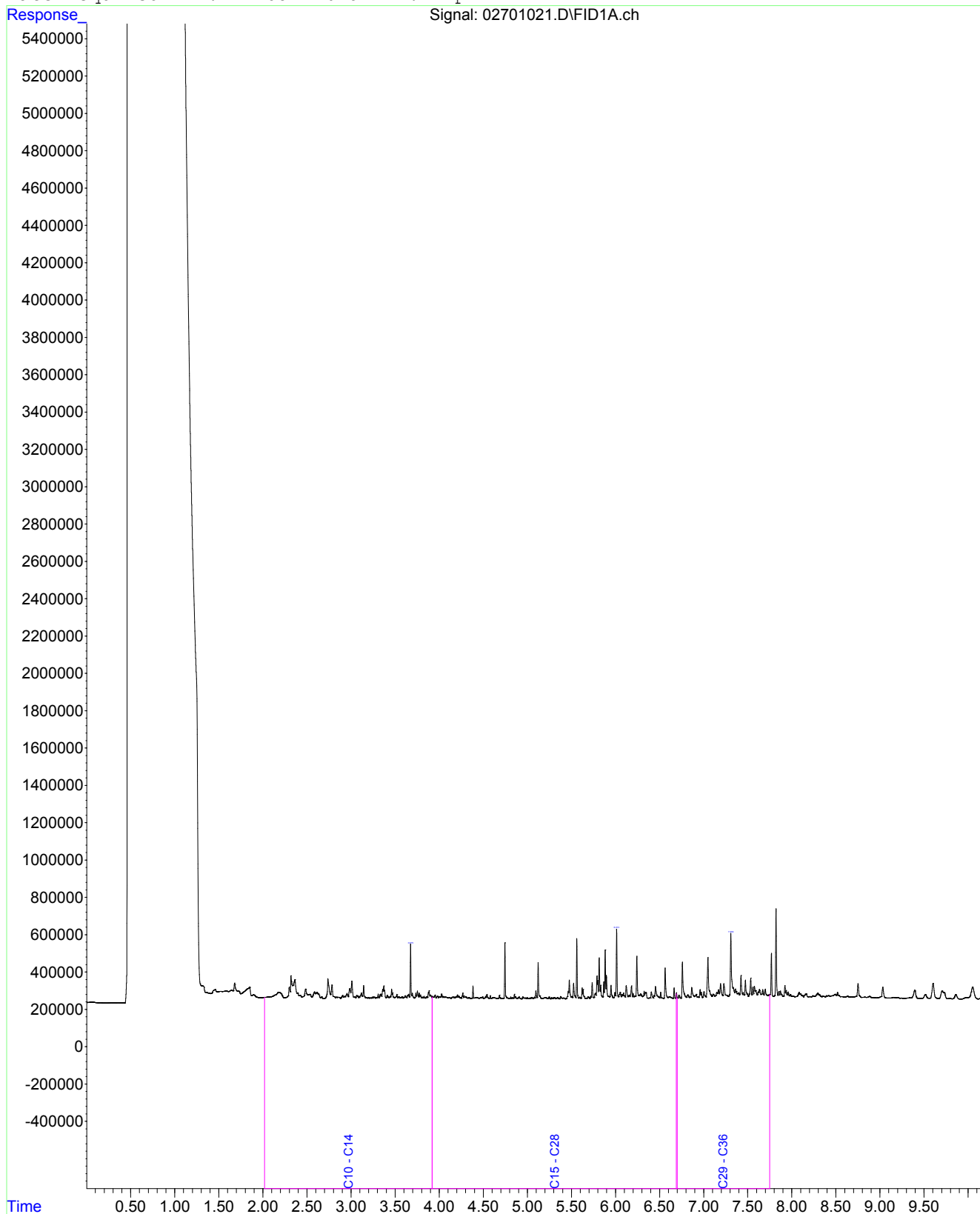
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Fraction Scheme : Standard
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Fraction Scheme : Standard
Data File : 02701021.D
Laboratory Number: EM1900402-033
Sample ID : CPT036B_BH12_140119_0.2
Date Acquired : 22 Jan 2019 4:17 pm



ANZ

| CONSULTANT: AECOM | | ADDRESS/OFFICE: | | SAMPLER: P4 / BC | | Destination Laboratory | |
|--|-----------------|---|---------|---|--------------------|------------------------|---|
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GIJPP) EES | | MOBILE: | | ALS | |
| PROJECT NUMBER & TASK CODE: 60572634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): 15/04/17 | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SURTES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | | | Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORe etc. | | | |
| COOLING/SEALING (if applicable) | | | | | | | |
| Initials: Yes No | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: No | | | | | | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | | | CONTAINER INFORMATION | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| | CP002-BH02-0.0 | S | 15/1/17 | 9:00 | 13AB, 14PFS, 14ASS | 3 | ✓ |
| | CP002-BH02-0.5 | S | 15/1/17 | 9:30 | | | ✓ |
| | CP002-BH02-1.0 | | | 9:45 | | | ✓ |
| | CP002-BH02-1.5 | | | 9:50 | | | ✓ |
| | CP002-BH02-2.0 | | | 9:55 | | | ✓ |
| | CP002-BH02-2.5 | | | 10:00 | | | ✓ |
| | CP025-BH07-0.0 | | | 11:20 | 1XJAB, A.S.S | 2 | ✓ |
| | CP025-BH09-0.5 | | | 11:30 | | | ✓ |
| | CP025-BH09-1.0 | | | 11:45 | | | ✓ |
| | CP025-BH09-1.5 | | | 11:50 | | | ✓ |
| | CP025-BH09-2.0 | | | 11:55 | | | ✓ |
| | CP025-BH09-2.5 | | | 12:00 | | | ✓ |
| | CP049B-BH17-0.0 | | | | 1XJAB, A.S.S | 2 | ✓ |
| | CP049B-BH17-0.5 | | | | | | ✓ |
| | CP049B-BH17-1.0 | | | | | | ✓ |
| | CP049B-BH17-1.5 | | | | | | ✓ |
| | CP049B-BH17-2.0 | | | | | | ✓ |
| | CP049B-BH17-2.5 | | | | | | ✓ |

Environmental Division
Melbourne
Work Order Reference
EM1900447



Telephone : +61-3-9549 9800

Forwarded to
Secondary Lab
Initials AK Date 17/1

| RELINQUISHED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
|--------------------------|-----------------------|--------------------|----------------------|--------------------|--|
| Name: <u>POPPY / BCN</u> | Date: <u>15/01/17</u> | Name: <u>Alice</u> | Date: <u>15/1/17</u> | Corr Note No: | |
| Of: <u>AECOM</u> | Time: <u>3:30</u> | Of: <u>ALS</u> | Time: <u>5:55pm</u> | Transport Co: | |

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = VOA Vial Sulfuric Preserved; Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic;
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

[illegible]

COC Page 2 of 2

From: [REDACTED]@aecom.com>
Sent: Wednesday, 16 January 2019 3:11 PM
To: [REDACTED]
Subject: RE: EM1900447/EM1900448 - AECOMAU - 60592634

Hi [REDACTED]

Please analyse:

EM1900447

1. CPT002_BH102_150119_0.0= IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
2. CPT002_BH102_150119_0.5 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
3. CPT002_BH102_150119_1.5 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
4. CPT025_BH09_150119_0.0= IWRG621
5. CPT025_BH09_150119_1.0= IWRG621
6. CPT049B_BH17_150119_0.0= IWRG621
7. CPT049B_BH17_150119_1.0= IWRG621
8. CPT002_BH102_150119_0.5 = Chromium Suite (EA033)
9. CPT002_BH102_150119_2.5 Chromium Suite (EA033)
10. CPT025_BH09_150119_0.5 = Chromium Suite (EA033)
11. CPT025_BH09_150119_1.0 = Chromium Suite (EA033)
12. CPT049B_BH17_150119_0.5 = Chromium Suite (EA033)
13. CPT049B_BH17_150119_1.5 = Chromium Suite (EA033)
14. QC151_150119 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
15. QC251_150119 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL) (Triplicate, please forward to Eurofins)
16. QC351_150119 = IWRG621 water equivalent, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
17. QC451_150119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
18. QC552_150119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
19. QC553_150119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)

Item 18 & 19 – analyse only the Trip Blank in esky that contains CPT002_BH102 samples.

EM1900448

1. CPT008_BH02_150119_0.2 = IWRG621
2. CPT008_BH02_150119_1.0 = IWRG621
3. CPT045_BH15_150119_0.5 = IWRG621
4. CPT045_BH15_150119_1.0 = IWRG621
5. CPT000_BH08_150119_0.2 = IWRG621
6. CPT000_BH08_150119_1.0 = IWRG621
7. CPT056_BH19_150119_0.2 = IWRG621
8. CPT056_BH19_150119_0.5 = IWRG621
9. CPT008_BH02_150119_0.5 = Chromium Suite (EA033)
10. CPT008_BH02_150119_1.5 = Chromium Suite (EA033)
11. CPT045_BH15_150119_1.0 = Chromium Suite (EA033)
12. CPT045_BH15_150119_1.5 = Chromium Suite (EA033)
13. CPT000_BH08_150119_ = Chromium Suite (EA033)
14. CPT000_BH08_150119_ Chromium Suite (EA033)
15. CPT056_BH19_150119_0.5 = Chromium Suite (EA033)
16. CPT056_BH19_150119_2.0 = Chromium Suite (EA033)
17. QC103_150119 = IWRG621
18. QC203_150119 = IWRG621 (Triplicate, please forward to Eurofins)

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900447

| | |
|--|---|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634 1.0</p> <p>Order number : 60592634 task 1.0</p> <p>C-O-C number : ----</p> <p>Site : ----</p> <p>Sampler : [REDACTED]</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 4</p> <p>Quote number : EB2017AECOMAU0014 (EN/004/16)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|--|---|

Dates

| | |
|---|--|
| <p>Date Samples Received : 15-Jan-2019 17:55</p> <p>Client Requested Due : 23-Jan-2019</p> <p>Date : </p> | <p>Issue Date : 17-Jan-2019</p> <p>Scheduled Reporting Date : 23-Jan-2019</p> |
|---|--|

Delivery Details

| | |
|---|--|
| <p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 2</p> <p>Receipt Detail :</p> | <p>Security Seal : Intact.</p> <p>Temperature : -0.7 - Ice present</p> <p>No. of samples received / analysed : 23 / 16</p> |
|---|--|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale, ALS Sydney and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|----------------------------------|--|
| Dissolved Mercury by FIMS : EG035F | | |
| QC351_15119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite A : EG020A-F | | |
| QC351_15119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite B : EG020B-F | | |
| QC351_15119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - EP231X (solids)
PFAS - Full Suite (28 analytes) | SOIL - P-16 + Total Cr
IWRG 621 (including Total Chromium) |
|----------------------|-----------------------------|------------------|---|--|--------------------------------------|---|---|
| EM1900447-001 | 15-Jan-2019 09:00 | CPT002_BH102_0.0 | | | ✓ | ✓ | ✓ |
| EM1900447-002 | 15-Jan-2019 09:30 | CPT002_BH102_0.5 | | ✓ | ✓ | ✓ | ✓ |
| EM1900447-003 | 15-Jan-2019 09:45 | CPT002_BH102_1.0 | ✓ | | | | |
| EM1900447-004 | 15-Jan-2019 09:50 | CPT002_BH102_1.5 | | | ✓ | ✓ | ✓ |
| EM1900447-005 | 15-Jan-2019 09:55 | CPT002_BH102_2.0 | ✓ | | | | |
| EM1900447-006 | 15-Jan-2019 10:00 | CPT002_BH102_2.5 | | ✓ | | | |
| EM1900447-007 | 15-Jan-2019 11:20 | CPT025_BH09_0.0 | | | ✓ | | ✓ |
| EM1900447-008 | 15-Jan-2019 11:30 | CPT026_BH09_0.5 | | ✓ | | | |
| EM1900447-009 | 15-Jan-2019 11:45 | CPT027_BH09_1.0 | | ✓ | ✓ | | ✓ |
| EM1900447-010 | 15-Jan-2019 11:50 | CPT028_BH09_1.5 | ✓ | | | | |
| EM1900447-011 | 15-Jan-2019 11:50 | CPT029_BH09_2.0 | ✓ | | | | |
| EM1900447-012 | 15-Jan-2019 12:00 | CPT030_BH09_2.5 | ✓ | | | | |
| EM1900447-013 | 15-Jan-2019 00:00 | CPT049B_BH17_0.0 | | | ✓ | | ✓ |
| EM1900447-014 | 15-Jan-2019 00:00 | CPT049B_BH17_0.5 | | ✓ | | | |
| EM1900447-015 | 15-Jan-2019 00:00 | CPT049B_BH17_1.0 | | | ✓ | | ✓ |
| EM1900447-016 | 15-Jan-2019 00:00 | CPT049B_BH17_1.5 | | ✓ | | | |
| EM1900447-017 | 15-Jan-2019 00:00 | CPT049B_BH17_2.0 | ✓ | | | | |
| EM1900447-018 | 15-Jan-2019 00:00 | CPT049B_BH17_2.5 | ✓ | | | | |
| EM1900447-019 | 15-Jan-2019 09:30 | QC151_15119 | | | ✓ | ✓ | ✓ |



Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - EP231X
PFAS - Full Suite (28 analytes) |
|----------------------|-----------------------------|------------------|---|---|
| EM1900447-020 | 15-Jan-2019 16:00 | QC351_15119 | ✓ | ✓ |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|------------------------------------|
| EM1900447-021 | 15-Jan-2019 16:00 | QC451_15119 | ✓ |
| EM1900447-022 | 15-Jan-2019 16:00 | QC552_15119 | ✓ |
| EM1900447-023 | 15-Jan-2019 16:00 | QC553_15119 | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| <div><div></div><div></div><div></div></div>
Client Sample ID(s) | Container | Due for
extraction | Due for
analysis | Samples Received | | Instructions Received | |
|---|--------------------------------|-----------------------|---------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| QC351_15119 | Clear Plastic Bottle - Natural | ---- | 15-Jan-2019 | 15-Jan-2019 | ✔ | 16-Jan-2019 | ✖ |



Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- Chain of Custody (CoC) (COC)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)

Email

- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)

Email

- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)

Email

- A4 - AU Sample Receipt Notification - Environmental HT (SRN)

Email

- Chain of Custody (CoC) (COC)

Email

- Chromatogram (CHROM)

Email

- EDI Format - ENMRG (ENMRG)

Email

- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)

Email

- EDI Format - ESDAT (ESDAT)

Email

- EDI Format - XTab (XTAB)

Email

- Electronic SRN for EQUIS (ESRN_EQUIS)

Email

- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

Email

CERTIFICATE OF ANALYSIS

Work Order : **EM1900447**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634 1.0
Order number : 60592634 task 1.0
C-O-C number : ----
Sampler : [REDACTED]
Site : ----
Quote number : EN/004/16
No. of samples received : 23
No. of samples analysed : 16

Page : 1 of 33
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 15-Jan-2019 17:55
Date Analysis Commenced : 17-Jan-2019
Issue Date : 24-Jan-2019 13:41



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|----------------------------------|---|
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | | Sydney Organics, Smithfield, NSW |
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- EG048G: EM1900448 #1 Poor matrix spike recovery for Hexavalent chromium due to matrix effects.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH102_0.0 | CPT002_BH102_0.5 | CPT002_BH102_1.5 | CPT002_BH102_2.5 | CPT025_BH09_0.0 |
|--|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:30 | 15-Jan-2019 09:50 | 15-Jan-2019 10:00 | 15-Jan-2019 11:20 |
| Compound | CAS Number | LOR | Unit | | EM1900447-001 | EM1900447-002 | EM1900447-004 | EM1900447-006 | EM1900447-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 5.2 | 5.3 | 4.3 | ---- | 4.4 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 4.8 | ---- | 4.3 | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | 23 | ---- | 51 | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | 0.04 | ---- | 0.08 | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | 0.006 | ---- | 0.006 | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | <10 | ---- | <10 | ---- |
| EA033-D: Retained Acidity | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | | ---- | ---- | ---- | 0.04 | ---- |
| HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | | ---- | ---- | ---- | 0.04 | ---- |
| Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | | ---- | ---- | ---- | <0.02 | ---- |
| acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | | ---- | ---- | ---- | <10 | ---- |
| sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | | ---- | ---- | ---- | <0.02 | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | ---- | 1.5 | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | 0.04 | ---- | 0.09 | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | 26 | ---- | 55 | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | 2 | ---- | 4 | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | 0.04 | ---- | 0.09 | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | 26 | ---- | 55 | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | 2 | ---- | 4 | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 5.0 | 20.4 | 21.9 | ---- | 4.8 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | 7 | <5 | <5 | ---- | 20 |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| Chromium | 7440-47-3 | 2 | mg/kg | | 9 | 30 | 33 | ---- | 8 |
| Copper | 7440-50-8 | 5 | mg/kg | | 28 | <5 | <5 | ---- | 11 |
| Lead | 7439-92-1 | 5 | mg/kg | | 37 | 8 | 8 | ---- | 78 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | 4 | 5 | <2 | ---- | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | | 8 | 4 | 4 | ---- | 2 |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | <5 | <5 | ---- | <5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH102_0.0 | CPT002_BH102_0.5 | CPT002_BH102_1.5 | CPT002_BH102_2.5 | CPT025_BH09_0.0 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:30 | 15-Jan-2019 09:50 | 15-Jan-2019 10:00 | 15-Jan-2019 11:20 |
| Compound | CAS Number | LOR | Unit | | EM1900447-001 | EM1900447-002 | EM1900447-004 | EM1900447-006 | EM1900447-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EG005T: Total Metals by ICP-AES - Continued | | | | | | | | | |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | <2 | <2 | ---- | <2 |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | <5 | <5 | ---- | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | 31 | <5 | <5 | <5 | ---- | 8 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | 0.2 | 0.1 | 0.1 | 0.1 | ---- | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | <1 | <1 | ---- | 1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | 240 | 230 | 240 | 240 | ---- | 50 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | ---- | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | <1 | <1 | ---- | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | <0.4 | <0.4 | ---- | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 | ---- | <0.01 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH102_0.0 | CPT002_BH102_0.5 | CPT002_BH102_1.5 | CPT002_BH102_2.5 | CPT025_BH09_0.0 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:30 | 15-Jan-2019 09:50 | 15-Jan-2019 10:00 | 15-Jan-2019 11:20 |
| Compound | CAS Number | LOR | Unit | | EM1900447-001 | EM1900447-002 | EM1900447-004 | EM1900447-006 | EM1900447-007 |
| | | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | <0.04 | <0.04 | ---- | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | <5 | <5 | ---- | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | <5 | <5 | ---- | <5 |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | <5 | <5 | ---- | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | <5 | <5 | ---- | <5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH102_0.0 | CPT002_BH102_0.5 | CPT002_BH102_1.5 | CPT002_BH102_2.5 | CPT025_BH09_0.0 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:30 | 15-Jan-2019 09:50 | 15-Jan-2019 10:00 | 15-Jan-2019 11:20 |
| Compound | CAS Number | LOR | Unit | | EM1900447-001 | EM1900447-002 | EM1900447-004 | EM1900447-006 | EM1900447-007 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds (Non-halogenated) - Continued | | | | | | | | | |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | <5 | <5 | ---- | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | <1 | <1 | ---- | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | 0.6 | 0.6 | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | 1.2 | 1.2 | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH102_0.0 | CPT002_BH102_0.5 | CPT002_BH102_1.5 | CPT002_BH102_2.5 | CPT025_BH09_0.0 |
|--|----------------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:30 | 15-Jan-2019 09:50 | 15-Jan-2019 10:00 | 15-Jan-2019 11:20 |
| Compound | CAS Number | LOR | Unit | | EM1900447-001 | EM1900447-002 | EM1900447-004 | EM1900447-006 | EM1900447-007 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | 0.76 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | 0.07 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | 0.83 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | 0.83 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | <10 | <10 | ---- | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | <10 | <10 | ---- | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | <100 | <100 | <100 | ---- | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | <100 | <100 | <100 | ---- | 160 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | <50 | <50 | <50 | ---- | 160 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | <50 | <50 | ---- | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | <100 | <100 | <100 | ---- | 190 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | <100 | <100 | <100 | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | <50 | <50 | <50 | ---- | 190 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | <10 | <10 | ---- | <10 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH102_0.0 | CPT002_BH102_0.5 | CPT002_BH102_1.5 | CPT002_BH102_2.5 | CPT025_BH09_0.0 |
|--|------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:30 | 15-Jan-2019 09:50 | 15-Jan-2019 10:00 | 15-Jan-2019 11:20 |
| Compound | CAS Number | LOR | Unit | | EM1900447-001 | EM1900447-002 | EM1900447-004 | EM1900447-006 | EM1900447-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP231A: Perfluoroalkyl Sulfonic Acids - Continued | | | | | | | | | |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | 0.0008 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | <0.001 | <0.001 | ---- | ---- |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | ---- | ---- |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | ---- | ---- |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH102_0.0 | CPT002_BH102_0.5 | CPT002_BH102_1.5 | CPT002_BH102_2.5 | CPT025_BH09_0.0 |
|---|--------------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:30 | 15-Jan-2019 09:50 | 15-Jan-2019 10:00 | 15-Jan-2019 11:20 |
| Compound | CAS Number | LOR | Unit | | EM1900447-001 | EM1900447-002 | EM1900447-004 | EM1900447-006 | EM1900447-007 |
| | | | | | Result | Result | Result | Result | Result |
| EP231C: Perfluoroalkyl Sulfonamides - Continued | | | | | | | | | |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | ---- | ---- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | ---- | ---- |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | ---- | ---- |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | ---- | ---- |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | ---- | ---- |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | ---- | ---- |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.0002 | mg/kg | | 0.0008 | <0.0002 | <0.0002 | ---- | ---- |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.0002 | mg/kg | | 0.0008 | <0.0002 | <0.0002 | ---- | ---- |
| Sum of PFAS (WA DER List) | ---- | 0.0002 | mg/kg | | 0.0008 | <0.0002 | <0.0002 | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 109 | 112 | 99.5 | ---- | 112 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 85.8 | 81.8 | 73.7 | ---- | 102 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 88.4 | 90.1 | 73.3 | ---- | 100 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 95.9 | 91.9 | 86.8 | ---- | 110 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 114 | 122 | 109 | ---- | 121 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 89.9 | 97.2 | 85.7 | ---- | 96.8 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | 104 | 113 | 99.2 | ---- | 119 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | 96.8 | 103 | 88.1 | ---- | 103 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | 102 | 107 | 91.2 | ---- | 109 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH102_0.0 | CPT002_BH102_0.5 | CPT002_BH102_1.5 | CPT002_BH102_2.5 | CPT025_BH09_0.0 |
|---|------------|--------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:30 | 15-Jan-2019 09:50 | 15-Jan-2019 10:00 | 15-Jan-2019 11:20 |
| Compound | CAS Number | LOR | Unit | | EM1900447-001 | EM1900447-002 | EM1900447-004 | EM1900447-006 | EM1900447-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | 120 | 127 | 111 | ---- | 125 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | 112 | 119 | 104 | ---- | 118 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | 124 | 132 | 117 | ---- | 134 |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | | 79.5 | 75.5 | 77.0 | ---- | ---- |
| 13C8-PFOA | ---- | 0.0002 | % | | 64.5 | 76.0 | 71.5 | ---- | ---- |

Client sample ID

| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT026_BH09_0.5 | CPT027_BH09_1.0 | CPT049B_BH17_0.0 | CPT049B_BH17_0.5 | CPT049B_BH17_1.0 |
|---|------------|-------|-------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|
| Client sampling date / time | | | | 15-Jan-2019 11:30 | 15-Jan-2019 11:45 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | |
| Compound | CAS Number | LOR | Unit | EM1900447-008 | EM1900447-009 | EM1900447-013 | EM1900447-014 | EM1900447-015 | |
| | | | | Result | Result | Result | Result | Result | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | ---- | 5.6 | 5.1 | ---- | 6.4 | |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 4.9 | 5.1 | ---- | 5.4 | ---- | |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 27 | 20 | ---- | 8 | ---- | |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.04 | 0.03 | ---- | <0.02 | ---- | |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.010 | 0.007 | ---- | 0.011 | ---- | |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | ---- | <10 | ---- | |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | ---- | 1.5 | ---- | |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.05 | 0.04 | ---- | 0.02 | ---- | |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 33 | 24 | ---- | 15 | ---- | |
| Liming Rate | ---- | 1 | kg CaCO3/t | 2 | 2 | ---- | 1 | ---- | |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.05 | 0.04 | ---- | 0.02 | ---- | |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 33 | 24 | ---- | 15 | ---- | |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 2 | 2 | ---- | 1 | ---- | |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | ---- | 27.6 | 6.2 | ---- | 20.5 | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | ---- | <5 | <5 | ---- | 10 | |
| Cadmium | 7440-43-9 | 1 | mg/kg | ---- | <1 | <1 | ---- | <1 | |
| Chromium | 7440-47-3 | 2 | mg/kg | ---- | 55 | 4 | ---- | 34 | |
| Copper | 7440-50-8 | 5 | mg/kg | ---- | <5 | <5 | ---- | <5 | |
| Lead | 7439-92-1 | 5 | mg/kg | ---- | 10 | 6 | ---- | 18 | |
| Molybdenum | 7439-98-7 | 2 | mg/kg | ---- | <2 | <2 | ---- | <2 | |
| Nickel | 7440-02-0 | 2 | mg/kg | ---- | 16 | <2 | ---- | 11 | |
| Selenium | 7782-49-2 | 5 | mg/kg | ---- | <5 | <5 | ---- | <5 | |
| Silver | 7440-22-4 | 2 | mg/kg | ---- | <2 | <2 | ---- | <2 | |
| Tin | 7440-31-5 | 5 | mg/kg | ---- | <5 | <5 | ---- | <5 | |
| Zinc | 7440-66-6 | 5 | mg/kg | ---- | <5 | 22 | ---- | <5 | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | ---- | 0.1 | <0.1 | ---- | 0.2 | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT026_BH09_0.5 | CPT027_BH09_1.0 | CPT049B_BH17_0.0 | CPT049B_BH17_0.5 | CPT049B_BH17_1.0 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 11:30 | 15-Jan-2019 11:45 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900447-008 | EM1900447-009 | EM1900447-013 | EM1900447-014 | EM1900447-015 |
| | | | | Result | Result | Result | Result | Result | Result |
| EG048: Hexavalent Chromium (Alkaline Digest) - Continued | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | ---- | <1 | 1 | ---- | ---- | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | ---- | 320 | 50 | ---- | ---- | 260 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | ---- | <0.1 | <0.1 | <0.1 | ---- | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | ---- | <0.4 | <0.4 | <0.4 | ---- | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | ---- | <0.04 | <0.04 | <0.04 | ---- | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT026_BH09_0.5 | CPT027_BH09_1.0 | CPT049B_BH17_0.0 | CPT049B_BH17_0.5 | CPT049B_BH17_1.0 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 11:30 | 15-Jan-2019 11:45 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900447-008 | EM1900447-009 | EM1900447-013 | EM1900447-014 | EM1900447-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT026_BH09_0.5 | CPT027_BH09_1.0 | CPT049B_BH17_0.0 | CPT049B_BH17_0.5 | CPT049B_BH17_1.0 |
|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 11:30 | 15-Jan-2019 11:45 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900447-008 | EM1900447-009 | EM1900447-013 | EM1900447-014 | EM1900447-015 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | ---- | 0.6 | 0.6 | 0.6 | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | ---- | 1.2 | 1.2 | 1.2 | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT026_BH09_0.5 | CPT027_BH09_1.0 | CPT049B_BH17_0.0 | CPT049B_BH17_0.5 | CPT049B_BH17_1.0 |
|--|--------------------------|-------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 11:30 | 15-Jan-2019 11:45 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900447-008 | EM1900447-009 | EM1900447-013 | EM1900447-014 | EM1900447-015 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | ---- | <10 | <10 | <10 | ---- | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | ---- | <10 | <10 | <10 | ---- | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | <100 | ---- | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | ---- | <100 | 190 | 190 | ---- | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | ---- | <50 | 190 | 190 | ---- | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | ---- | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | ---- | <100 | 230 | 230 | ---- | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | <100 | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | ---- | <50 | 230 | 230 | ---- | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | ---- | <10 | <10 | <10 | ---- | <10 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | ---- | 107 | 108 | 108 | ---- | 112 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | ---- | 69.7 | 93.3 | 93.3 | ---- | 78.6 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | ---- | 61.2 | 83.2 | 83.2 | ---- | 75.0 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | ---- | 71.2 | 94.2 | 94.2 | ---- | 86.8 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | ---- | 113 | 111 | 111 | ---- | 117 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT026_BH09_0.5 | CPT027_BH09_1.0 | CPT049B_BH17_0.0 | CPT049B_BH17_0.5 | CPT049B_BH17_1.0 |
|---|------------|-------|------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | 15-Jan-2019 11:30 | 15-Jan-2019 11:45 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1900447-008 | EM1900447-009 | EM1900447-013 | EM1900447-014 | EM1900447-015 |
| | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | ---- | 89.8 | 89.9 | ---- | 96.1 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | ---- | 111 | 115 | ---- | 113 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | ---- | 92.0 | 94.0 | ---- | 91.2 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | ---- | 93.6 | 100 | ---- | 92.6 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | ---- | 118 | 117 | ---- | 119 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | ---- | 111 | 111 | ---- | 115 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | ---- | 123 | 126 | ---- | 128 |



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|--|-------------------|------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT049B_BH17_1.5 | QC151_15119 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 00:00 | 15-Jan-2019 09:30 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900447-016 | EM1900447-019 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) - Continued | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | ---- | 250 | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ----- | 0.1 | mg/kg | | ---- | <0.1 | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | ---- | <0.2 | ---- | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ----- | 0.2 | mg/kg | | ---- | <0.2 | ---- | ---- | ---- |
| ^ Total Xylenes | ----- | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | ---- | <0.4 | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | ---- | <0.04 | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |



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|--|-------------------|------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT049B_BH17_1.5 | QC151_15119 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 00:00 | 15-Jan-2019 09:30 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900447-016 | EM1900447-019 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | ---- | <0.2 | ---- | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |



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|---|-------------------|------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT049B_BH17_1.5 | QC151_15119 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 00:00 | 15-Jan-2019 09:30 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900447-016 | EM1900447-019 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | ---- | 0.6 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | ---- | 1.2 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |



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|---|--------------------------|--------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT049B_BH17_1.5 | QC151_15119 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 00:00 | 15-Jan-2019 09:30 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900447-016 | EM1900447-019 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | ---- | <10 | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | ---- | <10 | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | ---- | <100 | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | ---- | <100 | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | ---- | <100 | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | ---- | <100 | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | ---- | <10 | ---- | ---- | ---- |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |



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|---|------------|--------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT049B_BH17_1.5 | QC151_15119 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 00:00 | 15-Jan-2019 09:30 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900447-016 | EM1900447-019 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP231A: Perfluoroalkyl Sulfonic Acids - Continued | | | | | | | | | |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | | ---- | <0.001 | ---- | ---- | ---- |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | | ---- | <0.0005 | ---- | ---- | ---- |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | | ---- | <0.0005 | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | | ---- | <0.0005 | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | | ---- | <0.0005 | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | | ---- | <0.0005 | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | | ---- | <0.0002 | ---- | ---- | ---- |



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|------------------------------------|------------|--------|------|-----------------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT049B_BH17_1.5 | QC151_15119 | ---- | ---- | ---- |
| | | | | Client sampling date / time | 15-Jan-2019 00:00 | 15-Jan-2019 09:30 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900447-016 | EM1900447-019 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP231S: PFAS Surrogate - Continued | | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | | ---- | 78.5 | ---- | ---- | ---- |
| 13C8-PFOA | ---- | 0.0002 | % | | ---- | 78.0 | ---- | ---- | ---- |



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|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC351_15119 | QC451_15119 | QC552_15119 | QC553_15119 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900447-020 | EM1900447-021 | EM1900447-022 | EM1900447-023 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 5.19 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | <0.005 | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | <0.004 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |



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|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC351_15119 | QC451_15119 | QC552_15119 | QC553_15119 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900447-020 | EM1900447-021 | EM1900447-022 | EM1900447-023 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |



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|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC351_15119 | QC451_15119 | QC552_15119 | QC553_15119 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900447-020 | EM1900447-021 | EM1900447-022 | EM1900447-023 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |



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|---|-------------------|------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC351_15119 | QC451_15119 | QC552_15119 | QC553_15119 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900447-020 | EM1900447-021 | EM1900447-022 | EM1900447-023 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | ---- |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | | <0.02 | ---- | ---- | ---- | ---- |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | | <0.02 | ---- | ---- | ---- | ---- |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | | <0.02 | ---- | ---- | ---- | ---- |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | | <0.02 | ---- | ---- | ---- | ---- |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | | <0.02 | ---- | ---- | ---- | ---- |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | | <0.1 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC351_15119 | QC451_15119 | QC552_15119 | QC553_15119 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900447-020 | EM1900447-021 | EM1900447-022 | EM1900447-023 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP231B: Perfluoroalkyl Carboxylic Acids - Continued | | | | | | | | | |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | ---- | ---- | ---- | ---- | ---- |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | ---- | ---- | ---- | ---- | ---- |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | ---- | ---- | ---- | ---- | ---- |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | ---- | ---- | ---- | ---- | ---- |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | ---- | ---- | ---- | ---- | ---- |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | ---- | ---- | ---- | ---- | ---- |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | ---- | ---- | ---- | ---- | ---- |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | ---- | ---- | ---- | ---- | ---- |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | ---- | ---- | ---- | ---- | ---- |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | ---- | ---- | ---- | ---- | ---- |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | ---- | ---- | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | ---- | ---- | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | ---- | ---- | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | ---- | ---- | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | ---- | ---- | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | ---- | ---- | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | ---- | ---- | ---- | ---- | ---- |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | ---- | ---- | ---- | ---- | ---- |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | ---- | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC351_15119 | QC451_15119 | QC552_15119 | QC553_15119 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | 15-Jan-2019 16:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900447-020 | EM1900447-021 | EM1900447-022 | EM1900447-023 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP080S: TPH(V)/BTEX Surrogates - Continued | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 108 | 104 | 105 | 110 | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 93.2 | 95.6 | 92.5 | 100.0 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 105 | 102 | 101 | 106 | ---- |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.02 | % | | 89.4 | ---- | ---- | ---- | ---- |
| 13C8-PFOA | ---- | 0.02 | % | | 99.0 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: SOIL | | □□□□□ □□□□ □ s □ | |
|---|------------|------------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |
| EP231S: PFAS Surrogate | | | |
| 13C4-PFOS | ---- | 60 | 120 |
| 13C8-PFOA | ---- | 60 | 120 |

| Sub-Matrix: WATER | | □□□□□ □□□□ □ s □ | |
|---|------------|------------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 13 | 90 |
| 2-Chlorophenol-D4 | 93951-73-6 | 42 | 117 |

| Sub-Matrix: WATER | |      | |
|--|------------|---|-----|
| Compound | CAS Number | % | |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 52 | 140 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 49 | 136 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 49 | 128 |
| 2-Fluorobiphenyl | 321-60-8 | 57 | 137 |
| Anthracene-d10 | 1719-06-8 | 67 | 137 |
| 4-Terphenyl-d14 | 1718-51-0 | 66 | 136 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |
| EP231S: PFAS Surrogate | | | |
| 13C4-PFOS | ---- | 60 | 120 |
| 13C8-PFOA | ---- | 60 | 120 |

Automated Guideline Comparison Report

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900447 | Page | : 1 of 2 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 1.0 | Date Received | : 15-Jan-2019 17:55 |
| Order number | : 60592634 task 1.0 | Date Analysed | : 17-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 24-Jan-2019 13:41 |
| No. of samples received | : 23 | | |
| No. of samples analysed | : 16 | Quote number | : EN/004/16 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material, C&FBL Categories 1a to 1c, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100' as per the EPA Publication 471/04/00 'Waste Criteria 2010'.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as 'Fill Material, C&FBL Categories 1a to 1c, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100' is the responsibility of the client. The report provides a summary of the results of the comparison of the data against the upper limit thresholds for the 'Fill Material, C&FBL Categories 1a to 1c, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100' as per the EPA Publication 471/04/00 'Waste Criteria 2010'.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report **only** provides evaluation data where chemical parameters specifically listed within the SWR5027 (2019) guideline information. Analysis by ALS using the P-20/1 package in full. P-20/1 package does not include Tributyltin.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Analytical Results

Sub-Matrix:

| | | | | Client sample ID | | | | | | |
|----------|--------|-----|------|--------------------|------|---------|------|------|------|------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□□□ □□ | | □□□□ □□ | | | | |
| | | | | □□ □ | | □□□□ | | | | |
| | | | | □□□ □ | | □□□ □ | | | | |
| | | | | | | | | | | |
| | | - | - | ---- | ---- | ---- | ---- | ---- | ---- | ---- |

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900447 | Page | : 1 of 31 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 1.0 | Date Samples Received | : 15-Jan-2019 |
| Order number | : 60592634 task 1.0 | Date Analysis Commenced | : 17-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 24-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : ---- | | |
| Quote number | : EN/004/16 | | |
| No. of samples received | : 23 | | |
| No. of samples analysed | : 16 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Senior Inorganic Chemist

Senior Acid Sulfate Soil Chemist

Senior Organic Chemist

Melbourne Inorganics, Springvale, VIC
Sydney Organics, Smithfield, NSW
Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2145789) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.2 | 5.3 | 1.90 | 0% - 20% |
| EM1900448-003 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.0 | 5.1 | 1.98 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2146395) | | | | | | | | | |
| EB1901387-001 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 6.7 | 6.5 | 3.03 | 0% - 20% |
| EM1900447-014 | CPT049B_BH17_0.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 8 | 7 | 17.8 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 5.4 | 5.5 | 1.83 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2146395) | | | | | | | | | |
| EB1901387-001 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.011 | 0.010 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EM1900447-014 | CPT049B_BH17_0.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.011 | 0.010 | 11.3 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2143479) | | | | | | | | | |
| EM1900402-001 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 11.5 | 10.5 | 8.45 | 0% - 50% |
| EM1900402-030 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 26.3 | 24.7 | 6.19 | 0% - 20% |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2143480) | | | | | | | | | |
| EM1900447-019 | QC151_15119 | EA055: Moisture Content | ---- | 0.1 | % | 20.8 | 21.2 | 2.04 | 0% - 20% |
| EM1900528-001 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 3.2 | 3.0 | 5.89 | No Limit |
| EG005T: Total Metals by ICP-AES (QC Lot: 2143328) | | | | | | | | | |
| EM1900402-001 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005T: Total Metals by ICP-AES (QC Lot: 2143328) - continued | | | | | | | | | |
| EM1900402-001 | Anonymous | EG005T: Chromium | 7440-47-3 | 2 | mg/kg | 22 | 19 | 11.6 | 0% - 50% |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 6 | 5 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 6 | 26.5 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 15 | 22 | 40.1 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 6 | 6 | 0.00 | No Limit |
| EM1900402-019 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Chromium | 7440-47-3 | 2 | mg/kg | 32 | 26 | 19.1 | 0% - 50% |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 9 | 8 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 6 | <5 | 22.2 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 6 | 5 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| EG005T: Total Metals by ICP-AES (QC Lot: 2143330) | | | | | | | | | |
| EM1900447-015 | CPT049B_BH17_1.0 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Chromium | 7440-47-3 | 2 | mg/kg | 34 | 36 | 5.51 | 0% - 50% |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 11 | 12 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 10 | 12 | 16.0 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 18 | 14 | 20.9 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| EM1900448-021 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Chromium | 7440-47-3 | 2 | mg/kg | 27 | 28 | 0.00 | 0% - 50% |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 7 | 7 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005T: Total Metals by ICP-AES (QC Lot: 2143330) - continued | | | | | | | | | |
| EM1900448-021 | Anonymous | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 8 | 11 | 21.9 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2143329) | | | | | | | | | |
| EM1900402-001 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900402-019 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2143331) | | | | | | | | | |
| EM1900447-015 | CPT049B_BH17_1.0 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | 0.2 | 0.2 | 0.00 | No Limit |
| EM1900448-021 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2145787) | | | | | | | | | |
| EM1900402-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900402-027 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2145788) | | | | | | | | | |
| EM1900447-019 | QC151_15119 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900448-027 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2145800) | | | | | | | | | |
| EM1900402-001 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | 1 | 1 | 0.00 | No Limit |
| EM1900402-027 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2145801) | | | | | | | | | |
| EM1900447-019 | QC151_15119 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900448-027 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2143626) | | | | | | | | | |
| EM1900402-001 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 160 | 210 | 25.9 | No Limit |
| EM1900402-027 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 50 | 60 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2143627) | | | | | | | | | |
| EM1900447-019 | QC151_15119 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 250 | 290 | 13.2 | No Limit |
| EM1900448-027 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 40 | 50 | 0.00 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2141886) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900448-008 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2141851) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|-------------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2141851) - continued | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900448-008 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2141851) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900448-008 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2141851) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EM1900448-008 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|-----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2141851) - continued | | | | | | | | | |
| EM1900448-008 | Anonymous | EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit | | |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2141884) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-9
0-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1900448-008 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-9
0-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2141884) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2141884) - continued | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900448-008 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2141884) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| EM1900448-008 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2141884) - continued | | | | | | | | | |
| EM1900448-008 | Anonymous | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2141884) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900448-008 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|-------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2141884) - continued | | | | | | | | | |
| EM1900448-008 | Anonymous | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2141851) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900448-008 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2141885) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900448-008 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2141851) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900448-008 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2141885) | | | | | | | | | |
| EM1900447-001 | CPT002_BH102_0.0 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900448-008 | Anonymous | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2147724) | | | | | | | | | |
| EM1900402-007 | Anonymous | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | 0.0005 | 0.0004 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| ES1901380-011 | Anonymous | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2147724) - continued | | | | | | | | | |
| ES1901380-011 | Anonymous | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2147724) | | | | | | | | | |
| EM1900402-007 | Anonymous | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | 0.00 | No Limit |
| ES1901380-011 | Anonymous | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | 0.00 | No Limit |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2147724) | | | | | | | | | |
| EM1900402-007 | Anonymous | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2147724) - continued | | | | | | | | | |
| ES1901380-011 | Anonymous | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2147724) | | | | | | | | | |
| EM1900402-007 | Anonymous | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| ES1901380-011 | Anonymous | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2142716) | | | | | | | | | |
| EM1900521-010 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.86 | 7.87 | 0.127 | 0% - 20% |
| EM1900281-001 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 5.73 | 5.73 | 0.00 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2140967) | | | | | | | | | |
| EM1900447-020 | QC351_15119 | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2140969) | | | | | | | | | |
| EM1900461-008 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.112 | 0.113 | 0.935 | 0% - 20% |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2140969) - continued | | | | | | | | | |
| EM1900461-008 | Anonymous | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 0.002 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.036 | 0.036 | 0.00 | 0% - 20% |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.048 | 0.047 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900447-020 | QC351_15119 | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2140968) | | | | | | | | | |
| EM1900447-020 | QC351_15119 | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2141373) | | | | | | | | | |
| EM1900281-001 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2141022) | | | | | | | | | |
| EM1900280-010 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EM1900497-008 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | 0.032 | 0.032 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2142719) | | | | | | | | | |
| EM1900521-006 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.4 | 0.5 | 0.00 | No Limit |
| EM1900281-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2142584) | | | | | | | | | |
| EM1900521-001 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900521-010 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2142584) | | | | | | | | | |
| EM1900521-001 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | 10 | 9 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2142584) - continued | | | | | | | | | |
| EM1900521-001 | Anonymous | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EM1900521-010 | Anonymous | EP074: 1.1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074F: Halogenated Aromatic Compounds (QC Lot: 2142584) | | | | | | | |
| EM1900521-001 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900521-010 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2142584) | | | | | | | | | |
| EM1900521-001 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900521-010 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2142585) | | | | | | | | | |
| EM1900521-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900521-010 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2142585) | | | | | | | | | |
| EM1900521-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900521-010 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2142585) | | | | | | | | | |
| EM1900521-001 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080: BTEXN (QC Lot: 2142585) - continued | | | | | | | | | |
| EM1900521-001 | Anonymous | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EM1900521-010 | Anonymous | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2146433) | | | | | | | | | |
| EM1900447-020 | QC351_15119 | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| EM1900521-011 | Anonymous | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2146433) | | | | | | | | | |
| EM1900447-020 | QC351_15119 | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900521-011 | Anonymous | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|-------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2146433) - continued | | | | | | | | | |
| EM1900521-011 | Anonymous | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | <0.1 | 0.00 | No Limit | | |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2146433) | | | | | | | | | |
| EM1900447-020 | QC351_15119 | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900521-011 | Anonymous | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | | | | | | | | |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2146433) | | | | | | | | | |
| EM1900447-020 | QC351_15119 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |

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 Work Order : EM1900447
 Client : AECOM Australia Pty Ltd
 Project : 60592634 1.0



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|-------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2146433) - continued | | | | | | | | | |
| EM1900447-020 | QC351_15119 | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900521-011 | Anonymous | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EP231P: PFAS Sums (QC Lot: 2146433) | | | | | | | | | |
| EM1900447-020 | QC351_15119 | EP231X: Sum of PFAS | ---- | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900521-011 | Anonymous | EP231X: Sum of PFAS | ---- | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-------|-------------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA033-A: Actual Acidity (QCLot: 2146395) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 88.9 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2146395) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 93.1 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-D: Retained Acidity (QCLot: 2146395) | | | | | | | | |
| EA033: Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA033: acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033: sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.02 | 0.052 % S | 89.8 | 70 | 130 |
| EA033: HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | <0.02 | 0.027 % S | 99.3 | 70 | 130 |
| EG005T: Total Metals by ICP-AES (QCLot: 2143328) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 90.7 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 85.8 | 76 | 108 |
| EG005T: Chromium | 7440-47-3 | 2 | mg/kg | <2 | 43.9 mg/kg | 88.5 | 78 | 110 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 91.8 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 88.8 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 81.7 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 92.1 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 97.0 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 96.0 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 89.6 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 93.7 | 79 | 110 |
| EG005T: Total Metals by ICP-AES (QCLot: 2143330) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 89.1 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 86.1 | 76 | 108 |
| EG005T: Chromium | 7440-47-3 | 2 | mg/kg | <2 | 43.9 mg/kg | 88.8 | 78 | 110 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 90.4 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 89.0 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 102 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 92.6 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 97.2 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 91.4 | 80 | 108 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------|-----------------------------|---------------------------------------|---------------------------|--------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
LowHigh | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG005T: Total Metals by ICP-AES (QCLot: 2143330) - continued | | | | | | | | |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 104 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 94.8 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2143329) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 94.6 | 77 | 104 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2143331) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 94.0 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2145787) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 101 | 75 | 112 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2145788) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 89.3 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145800) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 97.4 | 80 | 107 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145801) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 99.0 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2143626) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 100 | 75 | 110 |
| EK040T: Fluoride Total (QCLot: 2143627) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 82.8 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2141886) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 115 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2141851) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 91.6 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 97.4 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 88.0 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 85.7 | 66 | 115 |
| | 106-42-3 | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 88.7 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 85.6 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2141851) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 96.5 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2141851) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 77.7 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 89.4 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 98.0 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 93.9 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 95.4 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 98.5 | 69 | 112 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074I: Volatile Halogenated Compounds (QCLot: 2141851) - continued | | | | | | | | |
| EP074-UT: 1.1.1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 87.0 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 88.1 | 56 | 126 |
| EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 94.4 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.7 | 66 | 117 |
| EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 103 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 95.9 | 62 | 120 |
| EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 83.4 | 71 | 118 |
| EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 88.6 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.1 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 91.4 | 73 | 114 |
| EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.4 | 66 | 114 |
| EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.6 | 73 | 110 |
| EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 87.8 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2141884) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 69 | 123 |
| EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 127 | 55 | 128 |
| EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 110 | 56 | 128 |
| EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 125 | 66 | 126 |
| EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 114 | 60 | 126 |
| EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 65 | 124 |
| EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 116 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 90.8 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2141884) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 114 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 105 | 65 | 126 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 105 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 114 | 53 | 128 |
| EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 126 | 56 | 136 |
| EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 107 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 108 | 48 | 130 |
| EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 125 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 106 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 137 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2141884) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 123 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 118 | 70 | 130 |

Recovery Limits (%)

EP080/071: Total Petroleum Hydrocarbons (QCLot: 2141885)



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-----------------|--------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2141885) - continued | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 101 | 70 | 120 |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 108 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 104 | 77 | 117 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2141851) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 94.6 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTE
X | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2141885) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 102 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 108 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 98.2 | 68 | 124 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2147724) | | | | | | | | |
| EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 105 | 57 | 121 |
| EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 105 | 55 | 125 |
| EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 109 | 52 | 126 |
| EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 84.4 | 54 | 123 |
| EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 77.6 | 55 | 127 |
| EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 78.0 | 54 | 125 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2147724) | | | | | | | | |
| EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | 0.00625 mg/kg | 99.0 | 52 | 128 |
| EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 119 | 54 | 129 |
| EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 107 | 58 | 127 |
| EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 119 | 57 | 128 |
| EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 90.8 | 60 | 134 |
| EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 109 | 63 | 130 |
| EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 110 | 55 | 130 |
| EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 118 | 62 | 130 |
| EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 117 | 53 | 134 |
| EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 90.8 | 49 | 129 |
| EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 99.0 | 59 | 129 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2147724) | | | | | | | | |
| EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 82.0 | 52 | 132 |
| EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 99.5 | 65 | 126 |
| EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 92.1 | 64 | 126 |
| EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 74.5 | 63 | 124 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 82.2 | 58 | 125 |

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-------------|--------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2147724) - continued | | | | | | | | |
| EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 69.6 | 61 | 130 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 88.4 | 55 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2147724) | | | | | | | | |
| EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 109 | 54 | 130 |
| EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 98.0 | 61 | 130 |
| EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 110 | 62 | 130 |
| EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 114 | 60 | 130 |
| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2140967) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 97.5 | 84 | 116 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2140969) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 93.7 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 94.4 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 89.5 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 91.7 | 83 | 105 |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 92.4 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 92.1 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 100 | 83 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 92.6 | 85 | 109 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2140968) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 90.9 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2141373) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 98.0 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2141022) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 85.3 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2142719) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 97.2 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2141229) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 75.7 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2142584) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 103 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2142584) | | | | | | | | |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|---|----------|------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2142584) - continued | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 107 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 110 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 107 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 105 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 102 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 106 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 102 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 102 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 107 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 108 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 106 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 105 | 76 | 112 |
| EP074: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 97.6 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 127 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2142584) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 109 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 111 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 106 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 122 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2142584) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 104 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2141230) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 77.1 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 74.4 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 75.6 | 53 | 117 |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 75.4 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 75.3 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 74.1 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 74.7 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 80.1 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 84.2 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 85.0 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | 5 µg/L | 75.4 | 56 | 131 |
| | 205-82-3 | | | | | | | |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 81.1 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 78.0 | 54 | 124 |
| EP075(SIM): Indeno(1,2,3-cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 77.6 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 76.9 | 54 | 124 |

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2141230) - continued | | | | | | | | |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 78.0 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2141252) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 78.3 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 86.9 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 93.8 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 93.4 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 96.3 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 97.1 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 20 µg/L | 86.7 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 2 | µg/L | <2 | 40 µg/L | 65.1 | 53 | 125 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 98.2 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2141252) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 4 | µg/L | <4 | 10 µg/L | 36.1 | 18 | 51 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | 10 µg/L | 72.5 | 49 | 106 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | 20 µg/L | 66.2 | 41 | 91 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | 10 µg/L | 90.3 | 48 | 120 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | 10 µg/L | 84.8 | 47 | 128 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | 60 µg/L | 53.5 | 41 | 130 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | 60 µg/L | 28.5 | 19 | 49 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | 60 µg/L | 97.8 | 47 | 126 |
| EP075-EM: Dinoseb | 88-85-7 | 50 | µg/L | <50 | 60 µg/L | 90.2 | 49 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | 50 µg/L | 93.4 | 61 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2141252) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 10 µg/L | 88.6 | 57 | 126 |
| EP075-EM: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 91.6 | 62 | 134 |
| EP075-EM: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 84.4 | 58 | 133 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 85.2 | 60 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 84.0 | 59 | 132 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 92.7 | 61 | 137 |
| EP075-EM: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 10 µg/L | 84.6 | 59 | 130 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 104 | 59 | 135 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | 10 µg/L | 118 | 59 | 128 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2141231) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 108 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 120 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 114 | 55 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2142585) | | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2142585) - continued | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 98.0 | 65 | 126 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2141231) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 118 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 117 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 116 | 53 | 136 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2142585) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 101 | 64 | 124 |
| EP080: BTEXN (QCLot: 2142585) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 105 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 99.0 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 103 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 98.6 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 101 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 108 | 70 | 125 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2146433) | | | | | | | | |
| EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 77.8 | 70 | 130 |
| EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 85.2 | 70 | 130 |
| EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 84.8 | 70 | 130 |
| EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 87.6 | 70 | 130 |
| EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | 0.5 µg/L | 82.2 | 70 | 130 |
| EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 85.2 | 70 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2146433) | | | | | | | | |
| EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | 2.5 µg/L | 84.4 | 70 | 130 |
| EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 86.0 | 70 | 130 |
| EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 86.2 | 70 | 130 |
| EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 84.8 | 70 | 130 |
| EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | 0.5 µg/L | 86.8 | 70 | 130 |
| EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 86.6 | 70 | 130 |
| EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 80.8 | 70 | 130 |
| EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 90.0 | 70 | 130 |
| EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 89.6 | 70 | 130 |
| EP231X: Perfluorotridecanoic acid (PFTriDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 76.2 | 70 | 130 |
| EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 85.5 | 70 | 150 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2146433) | | | | | | | | |
| EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 77.2 | 70 | 130 |
| EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 83.0 | 70 | 150 |
| EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 78.0 | 70 | 150 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|---|-------------|------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2146433) - continued | | | | | | | | |
| EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 93.4 | 70 | 150 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 91.9 | 70 | 150 |
| EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 91.6 | 70 | 130 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 99.8 | 70 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2146433) | | | | | | | | |
| EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | 0.5 µg/L | 85.0 | 70 | 130 |
| EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | 0.5 µg/L | 92.8 | 70 | 130 |
| EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | 0.5 µg/L | 85.0 | 70 | 130 |
| EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | 0.5 µg/L | 85.2 | 70 | 130 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2143328) | | | | | | | |
| EM1900402-001 | Anonymous | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 87.2 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 93.8 | 84 | 116 |
| | | EG005T: Chromium | 7440-47-3 | 50 mg/kg | 102 | 79 | 121 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 95.9 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 99.0 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 96.3 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 94.7 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 75.8 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 91.7 | 74 | 128 |
| EG005T: Total Metals by ICP-AES (QCLot: 2143330) | | | | | | | |
| EM1900447-019 | QC151_15119 | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 82.6 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 93.4 | 84 | 116 |
| | | EG005T: Chromium | 7440-47-3 | 50 mg/kg | 87.6 | 79 | 121 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 93.9 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 90.7 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 95.1 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 92.8 | 78 | 120 |



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2143330) - continued | | | | | | | |
| EM1900447-019 | QC151_15119 | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 74.1 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 93.4 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2143329) | | | | | | | |
| EM1900402-001 | Anonymous | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 91.9 | 76 | 116 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2143331) | | | | | | | |
| EM1900447-019 | QC151_15119 | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 88.9 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2145787) | | | | | | | |
| EM1900402-003 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | 82.4 | 58 | 114 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2145788) | | | | | | | |
| EM1900448-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | # 26.8 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145800) | | | | | | | |
| EM1900402-003 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 98.9 | 77 | 113 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145801) | | | | | | | |
| EM1900448-001 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 102 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2143626) | | | | | | | |
| EM1900402-003 | Anonymous | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 93.8 | 70 | 130 |
| EK040T: Fluoride Total (QCLot: 2143627) | | | | | | | |
| EM1900448-001 | Anonymous | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 95.2 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2141886) | | | | | | | |
| EM1900447-007 | CPT025_BH09_0.0 | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 106 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2141851) | | | | | | | |
| EM1900447-002 | CPT002_BH102_0.5 | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 81.5 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 81.0 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2141851) | | | | | | | |
| EM1900447-002 | CPT002_BH102_0.5 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 82.9 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 78.9 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 80.1 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2141884) | | | | | | | |
| EM1900447-002 | CPT002_BH102_0.5 | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 115 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 130 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 51.0 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2141884) | | | | | | | |
| EM1900447-002 | CPT002_BH102_0.5 | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 116 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 104 | 13 | 129 |



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2141884) | | | | | | | |
| EM1900447-002 | CPT002_BH102_0.5 | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 110 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 117 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2141851) | | | | | | | |
| EM1900447-002 | CPT002_BH102_0.5 | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 72.6 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2141885) | | | | | | | |
| EM1900447-004 | CPT002_BH102_1.5 | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 100 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 108 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 103 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2141851) | | | | | | | |
| EM1900447-002 | CPT002_BH102_0.5 | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 69.5 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2141885) | | | | | | | |
| EM1900447-004 | CPT002_BH102_1.5 | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 102 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 107 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 96.1 | 44 | 126 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2147724) | | | | | | | |
| EM1900402-007 | Anonymous | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.00125 mg/kg | 118 | 50 | 130 |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.00125 mg/kg | 101 | 50 | 130 |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.00125 mg/kg | 112 | 50 | 130 |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.00125 mg/kg | 92.8 | 50 | 130 |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.00125 mg/kg | 78.0 | 50 | 130 |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.00125 mg/kg | 78.8 | 50 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2147724) | | | | | | | |
| EM1900402-007 | Anonymous | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.00625 mg/kg | 100 | 30 | 130 |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.00125 mg/kg | 124 | 50 | 130 |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.00125 mg/kg | 116 | 50 | 130 |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.00125 mg/kg | 120 | 50 | 130 |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.00125 mg/kg | 105 | 50 | 130 |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.00125 mg/kg | 122 | 50 | 130 |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.00125 mg/kg | 124 | 50 | 130 |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.00125 mg/kg | 121 | 50 | 130 |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.00125 mg/kg | 121 | 50 | 130 |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.00125 mg/kg | 98.8 | 30 | 130 |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.00312 mg/kg | 89.4 | 30 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2147724) | | | | | | | |
| EM1900402-007 | Anonymous | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.00125 mg/kg | 99.6 | 50 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.00312 mg/kg | 75.5 | 30 | 130 |

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|-------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2147724) - continued | | | | | | | |
| EM1900402-007 | Anonymous | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.00312 mg/kg | 70.2 | 30 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.00312 mg/kg | 64.4 | 30 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.00312 mg/kg | 84.0 | 30 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.00125 mg/kg | 88.8 | 30 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.00125 mg/kg | 92.0 | 30 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2147724) | | | | | | | |
| EM1900402-007 | Anonymous | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.00125 mg/kg | 122 | 50 | 130 |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.00125 mg/kg | 124 | 50 | 130 |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.00125 mg/kg | 116 | 50 | 130 |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.00125 mg/kg | 115 | 50 | 130 |
| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2140969) | | | | | | | |
| EM1900447-020 | QC351_15119 | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 87.4 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 85.4 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 87.6 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 87.3 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 83.6 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 84.1 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2140968) | | | | | | | |
| EM1900448-025 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 97.0 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2141373) | | | | | | | |
| EM1900447-020 | QC351_15119 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 98.6 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2141022) | | | | | | | |
| EM1900447-020 | QC351_15119 | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 100 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2142719) | | | | | | | |
| EM1900448-025 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 96.4 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2142584) | | | | | | | |
| EM1900447-020 | QC351_15119 | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 110 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 86.6 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2142584) | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2142584) - continued | | | | | | | |
| EM1900447-020 | QC351_15119 | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 96.8 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2142585) | | | | | | | |
| EM1900447-020 | QC351_15119 | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 75.4 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2142585) | | | | | | | |
| EM1900447-020 | QC351_15119 | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 75.4 | 44 | 122 |
| EP080: BTEXN (QCLot: 2142585) | | | | | | | |
| EM1900447-020 | QC351_15119 | EP080: Benzene | 71-43-2 | 20 µg/L | 104 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 94.4 | 72 | 132 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2146433) | | | | | | | |
| EM1900447-020 | QC351_15119 | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.5 µg/L | 81.6 | 50 | 130 |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.5 µg/L | 90.8 | 50 | 130 |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.5 µg/L | 90.6 | 50 | 130 |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.5 µg/L | 95.6 | 50 | 130 |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.5 µg/L | 86.0 | 50 | 130 |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.5 µg/L | 90.4 | 50 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2146433) | | | | | | | |
| EM1900447-020 | QC351_15119 | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 2.5 µg/L | 93.2 | 50 | 130 |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.5 µg/L | 93.4 | 50 | 130 |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.5 µg/L | 91.8 | 50 | 130 |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.5 µg/L | 88.6 | 50 | 130 |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.5 µg/L | 92.0 | 50 | 130 |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.5 µg/L | 90.4 | 50 | 130 |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.5 µg/L | 86.4 | 50 | 130 |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.5 µg/L | 94.2 | 50 | 130 |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.5 µg/L | 99.0 | 50 | 130 |
| | | EP231X: Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.5 µg/L | 82.2 | 50 | 130 |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 1.25 µg/L | 98.0 | 50 | 150 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2146433) | | | | | | | |
| EM1900447-020 | QC351_15119 | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.5 µg/L | 86.6 | 50 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 1.25 µg/L | 91.0 | 50 | 150 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 1.25 µg/L | 81.0 | 50 | 150 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 1.25 µg/L | 93.8 | 50 | 150 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 1.25 µg/L | 104 | 50 | 150 |

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 Work Order : EM1900447
 Client : AECOM Australia Pty Ltd
 Project : 60592634 1.0



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|-------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2146433) - continued | | | | | | | |
| EM1900447-020 | QC351_15119 | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.5 µg/L | 104 | 50 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.5 µg/L | 113 | 50 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2146433) | | | | | | | |
| EM1900447-020 | QC351_15119 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.5 µg/L | 87.6 | 50 | 130 |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.5 µg/L | 102 | 50 | 130 |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.5 µg/L | 87.8 | 50 | 130 |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.5 µg/L | 93.8 | 50 | 130 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1900447**

Page : 1 of 15

Client : **AECOM Australia Pty Ltd**

Laboratory : Environmental Division Melbourne

Contact : [REDACTED]

Telephone : +6138549 9645

Project : 60592634 1.0

Date Samples Received : 15-Jan-2019

Site : [REDACTED]

Issue Date : 24-Jan-2019

Sampler : [REDACTED]

No. of samples received : 23

Order number : 60592634 task 1.0

No. of samples analysed : 16

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|---------------------|------------|--------|---------|---|
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | EM1900448--001 | Anonymous | Hexavalent Chromium | 18540-29-9 | 26.8 % | 58-114% | Recovery less than lower data quality objective |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|---|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
QC351_15119 | ---- | ---- | ---- | 18-Jan-2019 | 15-Jan-2019 | 3 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 15 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 2 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 2 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 17 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 15 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 2 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 2 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 17 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---------------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| Container / Client Sample ID(s) | | | | | | | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001) | | | | | | | | |
| CPT002_BH102_0.0,
CPT002_BH102_1.5,
CPT027_BH09_1.0,
CPT049B_BH17_1.0, | CPT002_BH102_0.5,
CPT025_BH09_0.0,
CPT049B_BH17_0.0,
QC151_15119 | 15-Jan-2019 | 21-Jan-2019 | 22-Jan-2019 | ✓ | 21-Jan-2019 | 21-Jan-2019 | ✓ |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | | | | | | | |
| CPT002_BH102_0.5,
CPT026_BH09_0.5,
CPT049B_BH17_0.5, | CPT002_BH102_2.5,
CPT027_BH09_1.0,
CPT049B_BH17_1.5 | 15-Jan-2019 | 22-Jan-2019 | 15-Jan-2020 | ✓ | 22-Jan-2019 | 22-Apr-2019 | ✓ |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | | | | | | | |
| CPT002_BH102_0.5,
CPT026_BH09_0.5,
CPT049B_BH17_0.5, | CPT002_BH102_2.5,
CPT027_BH09_1.0,
CPT049B_BH17_1.5 | 15-Jan-2019 | 22-Jan-2019 | 15-Jan-2020 | ✓ | 22-Jan-2019 | 22-Apr-2019 | ✓ |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | | | | | | | |
| CPT002_BH102_0.5,
CPT026_BH09_0.5,
CPT049B_BH17_0.5, | CPT002_BH102_2.5,
CPT027_BH09_1.0,
CPT049B_BH17_1.5 | 15-Jan-2019 | 22-Jan-2019 | 15-Jan-2020 | ✓ | 22-Jan-2019 | 22-Apr-2019 | ✓ |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | | | | | | | |
| CPT002_BH102_0.5,
CPT026_BH09_0.5,
CPT049B_BH17_0.5, | CPT002_BH102_2.5,
CPT027_BH09_1.0,
CPT049B_BH17_1.5 | 15-Jan-2019 | 22-Jan-2019 | 15-Jan-2020 | ✓ | 22-Jan-2019 | 22-Apr-2019 | ✓ |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | | | | | | | |
| CPT002_BH102_0.5,
CPT026_BH09_0.5,
CPT049B_BH17_0.5, | CPT002_BH102_2.5,
CPT027_BH09_1.0,
CPT049B_BH17_1.5 | 15-Jan-2019 | 22-Jan-2019 | 15-Jan-2020 | ✓ | 22-Jan-2019 | 22-Apr-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055) | | | | | | | | |
| CPT002_BH102_0.0,
CPT002_BH102_1.5,
CPT027_BH09_1.0,
CPT049B_BH17_1.0, | CPT002_BH102_0.5,
CPT025_BH09_0.0,
CPT049B_BH17_0.0,
QC151_15119 | 15-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 29-Jan-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T) | | 15-Jan-2019 | 21-Jan-2019 | 14-Jul-2019 | ✓ | 21-Jan-2019 | 14-Jul-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T) | | 15-Jan-2019 | 21-Jan-2019 | 12-Feb-2019 | ✓ | 22-Jan-2019 | 12-Feb-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G) | | 15-Jan-2019 | 21-Jan-2019 | 12-Feb-2019 | ✓ | 21-Jan-2019 | 28-Jan-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF) | | 15-Jan-2019 | 21-Jan-2019 | 29-Jan-2019 | ✓ | 22-Jan-2019 | 04-Feb-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T) | | 15-Jan-2019 | 21-Jan-2019 | 12-Feb-2019 | ✓ | 22-Jan-2019 | 12-Feb-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM) | | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 21-Jan-2019 | 27-Feb-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 15-Jan-2019 | 18-Jan-2019 | 22-Jan-2019 | ✓ | 21-Jan-2019 | 22-Jan-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 15-Jan-2019 | 18-Jan-2019 | 22-Jan-2019 | ✓ | 21-Jan-2019 | 22-Jan-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 15-Jan-2019 | 18-Jan-2019 | 22-Jan-2019 | ✓ | 21-Jan-2019 | 22-Jan-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 21-Jan-2019 | 27-Feb-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 21-Jan-2019 | 27-Feb-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 21-Jan-2019 | 27-Feb-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 21-Jan-2019 | 27-Feb-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 15-Jan-2019 | 18-Jan-2019 | 22-Jan-2019 | ✓ | 21-Jan-2019 | 22-Jan-2019 | ✓ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 15-Jan-2019 | 18-Jan-2019 | 22-Jan-2019 | ✔ | 21-Jan-2019 | 22-Jan-2019 | ✔ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | CPT025_BH09_0.0, | | | | | | | |
| CPT027_BH09_1.0, | CPT049B_BH17_0.0, | | | | | | | |
| CPT049B_BH17_1.0, | QC151_15119 | | | | | | | |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| HDPE Soil Jar (EP231X) | | 15-Jan-2019 | 22-Jan-2019 | 14-Jul-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | QC151_15119 | | | | | | | |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| HDPE Soil Jar (EP231X) | | 15-Jan-2019 | 22-Jan-2019 | 14-Jul-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | QC151_15119 | | | | | | | |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| HDPE Soil Jar (EP231X) | | 15-Jan-2019 | 22-Jan-2019 | 14-Jul-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | QC151_15119 | | | | | | | |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | |
| HDPE Soil Jar (EP231X) | | 15-Jan-2019 | 22-Jan-2019 | 14-Jul-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | QC151_15119 | | | | | | | |
| EP231P: PFAS Sums | | | | | | | | |
| HDPE Soil Jar (EP231X) | | 15-Jan-2019 | 22-Jan-2019 | 14-Jul-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| CPT002_BH102_0.0, | CPT002_BH102_0.5, | | | | | | | |
| CPT002_BH102_1.5, | QC151_15119 | | | | | | | |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
QC351_15119 | 15-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 15-Jan-2019 | ✘ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Natural (EG020B-F)
QC351_15119 | 15-Jan-2019 | ---- | ---- | ---- | 17-Jan-2019 | 14-Jul-2019 | ✔ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Natural (EG035F)
QC351_15119 | 15-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 12-Feb-2019 | ✔ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Opaque plastic bottle - NaOH (EG050F)
QC351_15119 | 15-Jan-2019 | ---- | ---- | ---- | 17-Jan-2019 | 12-Feb-2019 | ✔ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| Opaque plastic bottle - NaOH (EK026SF)
QC351_15119 | 15-Jan-2019 | ---- | ---- | ---- | 17-Jan-2019 | 29-Jan-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
QC351_15119 | 15-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 12-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
QC351_15119 | 15-Jan-2019 | 21-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC351_15119 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC351_15119 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC351_15119 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC351_15119 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
QC351_15119 | 15-Jan-2019 | 21-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC351_15119 | 15-Jan-2019 | 17-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 26-Feb-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC351_15119 | 15-Jan-2019 | 17-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 26-Feb-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC351_15119 | 15-Jan-2019 | 17-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 26-Feb-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC351_15119 | 15-Jan-2019 | 21-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC351_15119,
QC552_15119,
QC451_15119,
QC553_15119 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC351_15119 | 15-Jan-2019 | 21-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC351_15119, QC451_15119,
QC552_15119, QC553_15119 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |
| EP080: BTEXN | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC351_15119, QC451_15119,
QC552_15119, QC553_15119 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | |
| HDPE (no PTFE) (EP231X)
QC351_15119 | 15-Jan-2019 | 21-Jan-2019 | 14-Jul-2019 | ✓ | 21-Jan-2019 | 14-Jul-2019 | ✓ |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | |
| HDPE (no PTFE) (EP231X)
QC351_15119 | 15-Jan-2019 | 21-Jan-2019 | 14-Jul-2019 | ✓ | 21-Jan-2019 | 14-Jul-2019 | ✓ |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | |
| HDPE (no PTFE) (EP231X)
QC351_15119 | 15-Jan-2019 | 21-Jan-2019 | 14-Jul-2019 | ✓ | 21-Jan-2019 | 14-Jul-2019 | ✓ |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | |
| HDPE (no PTFE) (EP231X)
QC351_15119 | 15-Jan-2019 | 21-Jan-2019 | 14-Jul-2019 | ✓ | 21-Jan-2019 | 14-Jul-2019 | ✓ |
| EP231P: PFAS Sums | | | | | | | |
| HDPE (no PTFE) (EP231X)
QC351_15119 | 15-Jan-2019 | 21-Jan-2019 | 14-Jul-2019 | ✓ | 21-Jan-2019 | 14-Jul-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | Quality Control Specification | |
|---|----------|-------|---------|----------|----------|-------------------------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | | Evaluation |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 4 | 38 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 4 | 38 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 4 | 35 | 11.43 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 4 | 36 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 4 | 39 | 10.26 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 17 | 11.76 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 4 | 38 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 38 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 35 | 5.71 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 36 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 39 | 5.13 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 38 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 38 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 35 | 5.71 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 36 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 39 | 5.13 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 17 | 5.88 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 38 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 15 | 6.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 38 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 35 | 5.71 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 36 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 39 | 5.13 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 17 | 5.88 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 2 | 50.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 7 | 28.57 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 2 | 50.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 15 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 2 | 19 | 10.53 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 2 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 2 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 17 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 2 | 13 | 15.38 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 2 | 50.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 7 | 14.29 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 2 | 50.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 15 | 6.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 15 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 2 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 2 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 17 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|---|
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | SOIL | In-House. A portion of soil is extracted with MTBE. The extract is taken to dryness, made up in mobile phase. Analysis is by LC/MSMS, ESI Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1 |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using depheylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |

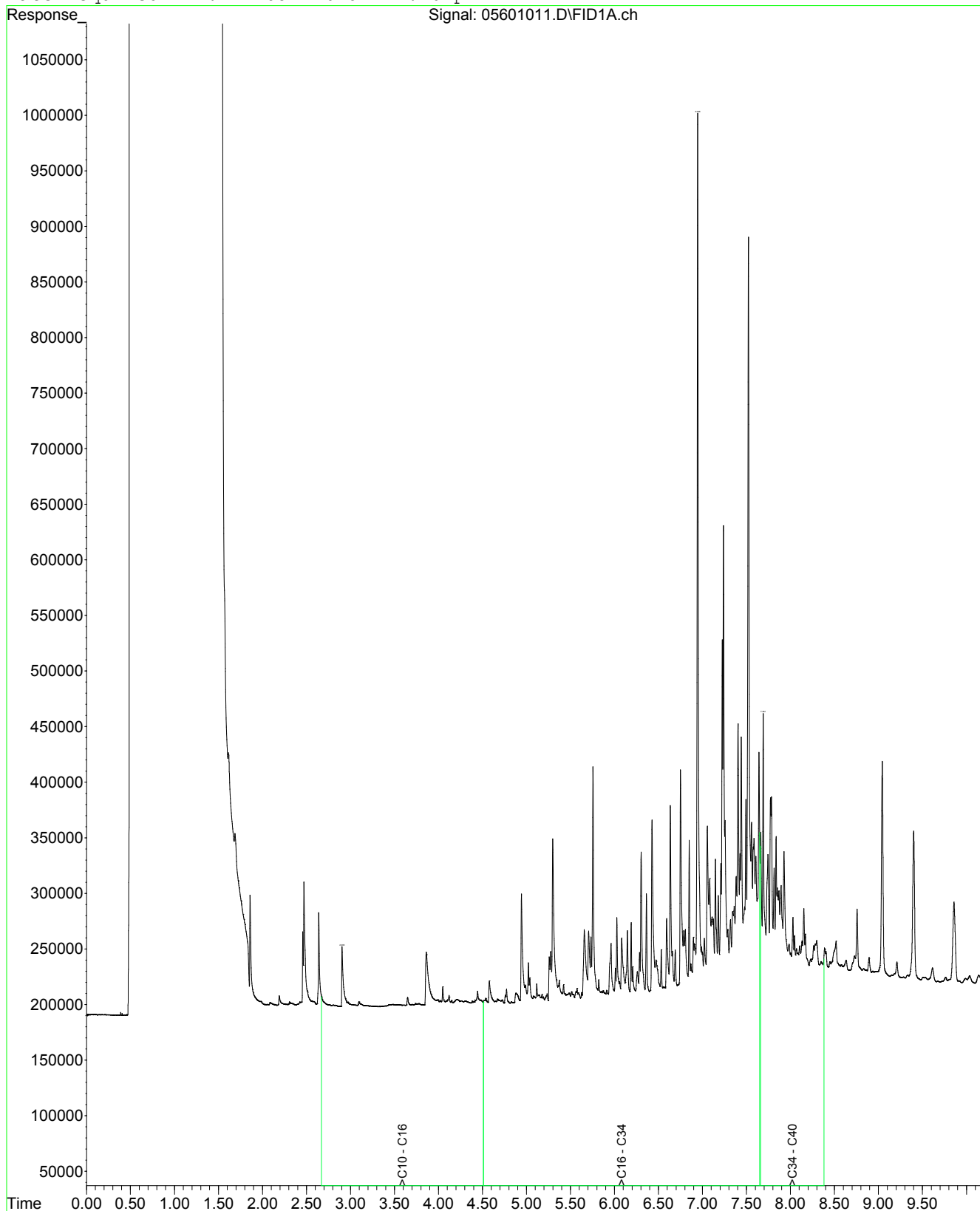


| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | WATER | In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1 |
| Preparation Methods | Method | Matrix | Method Descriptions |
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |

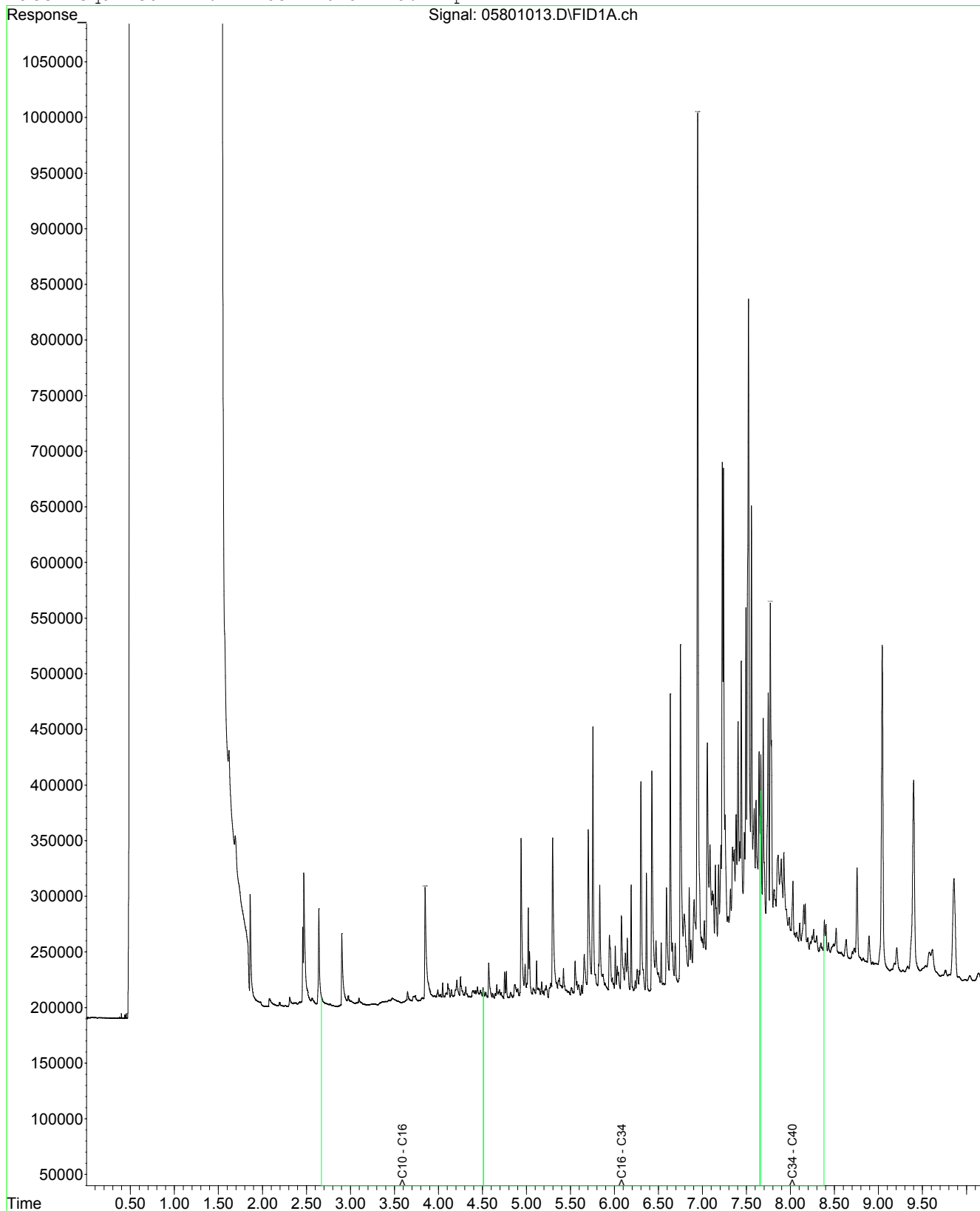


| Preparation Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Sample Extraction for PFAS | EP231-PR | SOIL | In house |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |
| Preparation for PFAS in water. | EP231-PR | WATER | Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis. |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

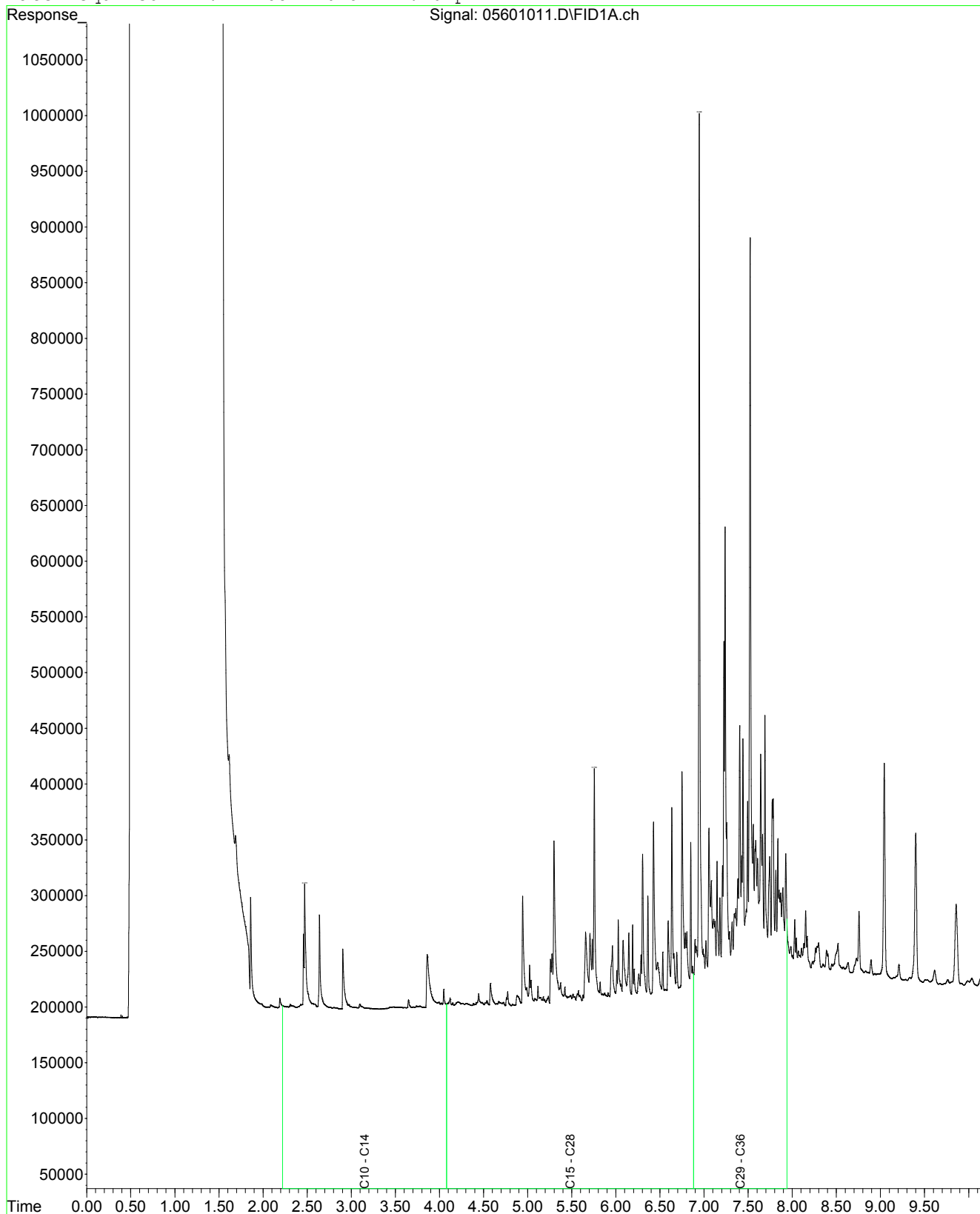
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Data File : 05601011.D
Laboratory Number: EM1900447-007
Sample ID : CPT025_BH09_0.0
Date Acquired : 21 Jan 2019 7:40 pm



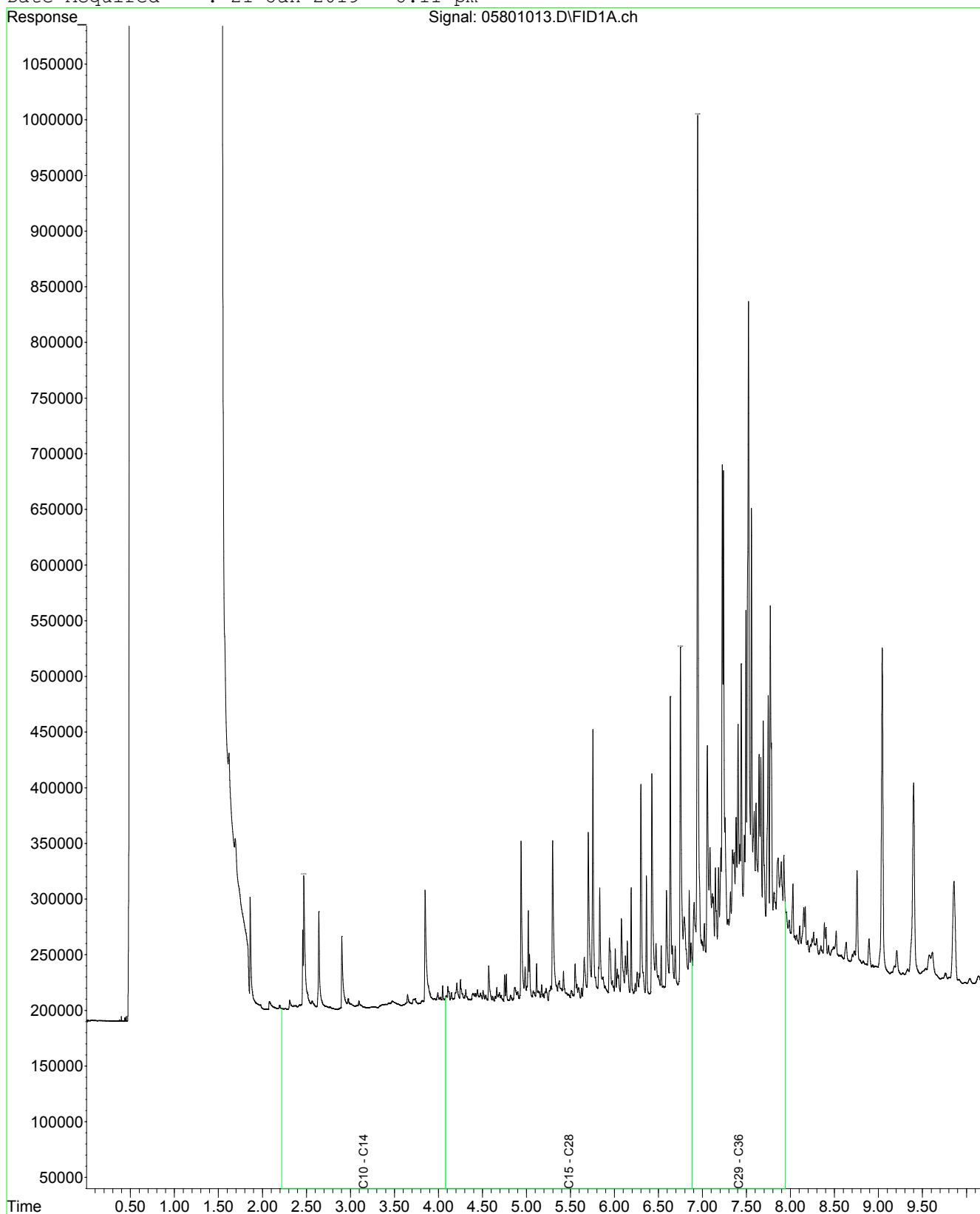
Fraction Scheme : NEPM Draft HIL
Data File : 05801013.D
Laboratory Number: EM1900447-013
Sample ID : CPT049B_BH17_0.0
Date Acquired : 21 Jan 2019 8:11 pm



Fraction Scheme : Standard
Data File : 05601011.D
Laboratory Number: EM1900447-007
Sample ID : CPT025_BH09_0.0
Date Acquired : 21 Jan 2019 7:40 pm



Fraction Scheme : Standard
Data File : 05801013.D
Laboratory Number: EM1900447-013
Sample ID : CPT049B_BH17_0.0
Date Acquired : 21 Jan 2019 8:11 pm



FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: M. G. 10/10/18 | | Destination Laboratory | |
|---|------------------------|--|----------------|--|----------------|--|--------------------|
| PROJECT MANAGER (PM): | | SITE: GUJIP Groundwater Study | | MOBILE: | | ALS | |
| PROJECT NUMBER & TASK CODE: 60592639 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO. EN/096/18 | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | SAMPLER: M. G. 10/10/18 | | Notes: e.g. Highly contaminated sample
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | |
| COOLER SEAL (circle appropriate) | | | | | | | |
| Initial: Yes No N/A | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes No | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, V = Water) | | CONTAINER INFORMATION | | SAMPLER: M. G. 10/10/18 | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | CP1008-B402-150119-0.2 | S | 15-01-19 | 0900 | | 15-16 | |
| 2 | CP1008-B402-150119-0.5 | | | 0905 | | | X Please freeze |
| 3 | CP1008-B402-150119-1.0 | | | 0910 | | | X For acid sulfate |
| 4 | CP1008-B402-150119-1.5 | | | 0915 | | | |
| 5 | CP1008-B402-150119-2.0 | | | 0920 | | | |
| 6 | CP1008-B402-150119-2.5 | | | 0925 | | | |
| 7 | CP1008-B402-150119-3.0 | | | 1145 | | | |
| 8 | CP1008-B402-150119-3.5 | | | 1150 | | | |
| 9 | CP1008-B402-150119-4.0 | | | 1155 | | | |
| 10 | CP1008-B402-150119-4.5 | | | 1200 | | | |
| 11 | CP1008-B402-150119-5.0 | | | 1205 | | | |
| 12 | CP1008-B402-150119-5.5 | | | 1210 | | | |
| 13 | CP1008-B402-150119-6.0 | | | 1345 | | | |
| 14 | CP1008-B402-150119-6.5 | | | 1350 | | | |
| 15 | CP1008-B402-150119-7.0 | | | 1355 | | | |
| 16 | CP1008-B402-150119-7.5 | | | 1400 | | | |
| 17 | CP1008-B402-150119-8.0 | | | 1405 | | | |
| 18 | CP1008-B402-150119-8.5 | | | 1410 | | | |
| 19 | CP1008-B402-150119-9.0 | | | 1510 | | | |
| RELINQUISHED BY: | | RECEIVED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
| Name: S. M. G. 10/10/18 | Date: 15-01-19 | Name: S. M. G. 10/10/18 | Date: 15-01-19 | Name: S. M. G. 10/10/18 | Date: 15-01-19 | Con' Note No: | Transport Co: |
| Of: AECOM | Time: 1850 | Of: ALS | Time: 1850 | Of: ALS | Time: 1850 | | |
| Water Container Codes: P = Unpreserved Plastic; ORC = Nitric Preserved Plastic; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved, AP - Airfreight Unpreserved Plastic;
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Plastic; HS = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Salts; B = Unpreserved Bag. | | | | | | | |

Environmental Division
Melbourne
Work Order Reference
EM1900448

Telephone : + 61-3-8549 9600

COC Page 1 of 1

ANZ FQM - Generic Chain of Custody Form

| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: S. MacIntosh | | Destination Laboratory | |
|--|------------------------|------------------------------|----------|--|-------------|------------------------|--|
| PROJECT MANAGER (PM): | | SITE: GLPP Groundwater Study | | MOBILE: | | ALS | |
| PROJECT NUMBER & TASK CODE: 10592034 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: EN1006113 | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | |
| <p>FOR LABORATORY USE ONLY</p> <p>COOLER SEAL (circle appropriate): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>SAMPLE TEMPERATURE: <input type="checkbox"/> CHILLED: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> | | | | | | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | | | |
| CONTAINER INFORMATION | | | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc. |
| 20 | CPT000-B408-150119-0.5 | S | 15-01-19 | 1515 | | 1516 | |
| 21 | CPT000-B408-150119-1.0 | S | 15-01-19 | 1520 | | | X please freeze |
| 22 | CPT000-B408-150119-1.5 | S | 15-01-19 | 1525 | | | X bags for acid |
| 23 | CPT000-B408-150119-2.0 | S | 15-01-19 | 1530 | | | X Sulfate analysis |
| 24 | CPT000-B408-150119-2.5 | S | 15-01-19 | 1535 | | | X |
| 25 | CPT-000-150119 | S | 15-01-19 | 1540 | | | X |
| 26 | CPT-000-150119 | S | 15-01-19 | 1545 | | | X |
| 27 | CPT-000-150119 | S | 15-01-19 | 1550 | | | X |
| 28 | CPT-000-150119 | S | 15-01-19 | 1555 | | | X |
| 29 | CPT-000-150119 | S | 15-01-19 | 1600 | | | X |
| 30 | CPT-000-150119 | S | 15-01-19 | 1605 | | | X |
| 31 | CPT-000-150119 | S | 15-01-19 | 1610 | | | X |
| 32 | CPT-000-150119 | S | 15-01-19 | 1615 | | | X |
| 33 | CPT-000-150119 | S | 15-01-19 | 1620 | | | X |
| 34 | CPT-000-150119 | S | 15-01-19 | 1625 | | | X |
| 35 | CPT-000-150119 | S | 15-01-19 | 1630 | | | X |
| <p>RECEIVED BY: RECEIVED BY: RECEIVED BY:</p> <p>Name: Alice Name: Alice Name: Alice</p> <p>Date: 15-01-19 Date: 15-01-19 Date: 15-01-19</p> <p>Time: 1630 Time: 1630 Time: 1630</p> | | | | | | | |
| <p>Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Airfreight Unpreserved Plastic</p> <p>V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic;</p> <p>F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.</p> <p>Soil Container Codes: Jar = Unpreserved Glass Jar</p> | | | | | | | |

Please freeze bags for acid sulfate analysis

COC Page 2 of 2

From: [REDACTED]@aecom.com>
Sent: Wednesday, 16 January 2019 3:11 PM
To: [REDACTED]
Subject: RE: EM1900447/EM1900448 - AECOMAU - 60592634

Hi [REDACTED]

Please analyse:

EM1900447

1. CPT002_BH102_150119_0.0= IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
2. CPT002_BH102_150119_0.5 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
3. CPT002_BH102_150119_1.5 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
4. CPT025_BH09_150119_0.0= IWRG621
5. CPT025_BH09_150119_1.0= IWRG621
6. CPT049B_BH17_150119_0.0= IWRG621
7. CPT049B_BH17_150119_1.0= IWRG621
8. CPT002_BH102_150119_0.5 = Chromium Suite (EA033)
9. CPT002_BH102_150119_2.5 Chromium Suite (EA033)
10. CPT025_BH09_150119_0.5 = Chromium Suite (EA033)
11. CPT025_BH09_150119_1.0 = Chromium Suite (EA033)
12. CPT049B_BH17_150119_0.5 = Chromium Suite (EA033)
13. CPT049B_BH17_150119_1.5 = Chromium Suite (EA033)
14. QC151_150119 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
15. QC251_150119 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL) (Triplicate, please forward to Eurofins)
16. QC351_150119 = IWRG621 water equivalent, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
17. QC451_150119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
18. QC552_150119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
19. QC553_150119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)

Item 18 & 19 – analyse only the Trip Blank in esky that contains CPT002_BH102 samples.

EM1900448

1. CPT008_BH02_150119_0.2 = IWRG621 1
2. CPT008_BH02_150119_1.0 = IWRG621 3
3. CPT045_BH15_150119_0.5 = IWRG621 8
4. CPT045_BH15_150119_1.0 = IWRG621 9
5. CPT000_BH08_150119_0.2 = IWRG621 19
6. CPT000_BH08_150119_1.0 = IWRG621 21
7. CPT056_BH19_150119_0.2 = IWRG621 13
8. CPT056_BH19_150119_0.5 = IWRG621 14
9. CPT008_BH02_150119_0.5 = Chromium Suite (EA033) 2
10. CPT008_BH02_150119_1.5 = Chromium Suite (EA033) 4
11. CPT045_BH15_150119_1.0 = Chromium Suite (EA033) 9
12. CPT045_BH15_150119_1.5 = Chromium Suite (EA033) 10
13. CPT000_BH08_150119_ = Chromium Suite (EA033) ?
14. CPT000_BH08_150119_ Chromium Suite (EA033) ?
15. CPT056_BH19_150119_0.5 = Chromium Suite (EA033) 14
16. CPT056_BH19_150119_2.0 = Chromium Suite (EA033) 17
17. QC103_150119 = IWRG621 27
18. QC203_150119 = IWRG621 (Triplicate, please forward to Eurofins)

19. QC312_150119 = IWRG621 water equivalent 25
20. QC412_150119 = TPH(C6-C9)/BTEXN 26
21. QC520_150119 = TPH(C6-C9)/BTEXN 28
22. QC521_150119 = TPH(C6-C9)/BTEXN 29

At standard TAT thanks!

Senior Environmental Engineer

@aecom.com

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Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008

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From: [REDACTED]@alsglobal.com]

Sent: Wednesday, 16 January 2019 10:29 AM

To: [REDACTED]

Cc: [REDACTED]

Subject: EM1900447/EM1900448 - AECOMAU - 60592634

Hi [REDACTED]

Please find attached samples on hold

Thanks

Regards

Client Services – Springvale

Environmental



T +61 3 8549 9600

F +61 3 8549 9626

[REDACTED]@alsglobal.com

2-4 Westall Rd

Springvale Vic 3171

Australia

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ANZ
FQM - Generic Chain of Custody Form

| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER'S: S. Maullloch | | Destination Laboratory | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|--------------------------------------|----------|--|-------------|------------------------|-------|--|---------------|-----------------------|--|-------------|--|-------------|--|--------------------|--|--------|-----------|--------|------|------|-------------|---------------|-------|-------|---------------|--|--|--|--|--|--|--|-----|-------|---------------|
| PROJECT MANAGER (PM): | | SITE: GIAPP Groundwater Study | | MOBILE: | | ALS. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT NUMBER & TASK CODE: 60592639 | | P.O. NO.: | | EMAIL REPORT TO: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO. EN/096/18 | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FOR LABORATORY USE ONLY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COOLER SEAL (circle appropriate) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Picked: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CHILLED: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2">SAMPLE INFORMATION (note: S = Soil, W = Water)</th> <th colspan="2">CONTAINER INFORMATION</th> <th colspan="2">RECEIVED BY</th> <th colspan="2">RECEIVED BY</th> <th colspan="2">METHOD OF SHIPMENT</th> </tr> <tr> <th>ALS ID</th> <th>SAMPLE ID</th> <th>MATRIX</th> <th>DATE</th> <th>Time</th> <th>Type / Code</th> <th>Total bottles</th> <th>Name:</th> <th>Date:</th> <th>Conf Note No:</th> </tr> <tr> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Of:</th> <th>Time:</th> <th>Transport Co:</th> </tr> </thead> </table> | | | | | | | | SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | RECEIVED BY | | RECEIVED BY | | METHOD OF SHIPMENT | | ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | Name: | Date: | Conf Note No: | | | | | | | | Of: | Time: | Transport Co: |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | RECEIVED BY | | RECEIVED BY | | METHOD OF SHIPMENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | Name: | Date: | Conf Note No: | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | Of: | Time: | Transport Co: | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | CP1008-B402-150119-0.2 | S | 15.01.19 | 0900 | | 1516 | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | CP1008-B402-150119-0.5 | S | 15.01.19 | 0905 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | CP1008-B402-150119-1.0 | S | 15.01.19 | 0910 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | CP1008-B402-150119-1.5 | S | 15.01.19 | 0915 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | CP1008-B402-150119-2.0 | S | 15.01.19 | 0920 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | CP1008-B402-150119-2.5 | S | 15.01.19 | 0925 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | CP1045-B415-150119-0.2 | S | 15.01.19 | 1145 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | CP1045-B415-150119-0.5 | S | 15.01.19 | 1150 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | CP1045-B415-150119-1.0 | S | 15.01.19 | 1155 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | CP1045-B415-150119-1.5 | S | 15.01.19 | 1200 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | CP1045-B415-150119-2.0 | S | 15.01.19 | 1205 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | CP1045-B415-150119-2.5 | S | 15.01.19 | 1210 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | CP1056-B419-150119-0.2 | S | 15.01.19 | 1345 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | CP1056-B419-150119-0.5 | S | 15.01.19 | 1350 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | CP1056-B419-150119-1.0 | S | 15.01.19 | 1355 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | CP1056-B419-150119-1.5 | S | 15.01.19 | 1400 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | CP1056-B419-150119-2.0 | S | 15.01.19 | 1405 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | CP1056-B419-150119-2.5 | S | 15.01.19 | 1410 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | CP1008-B402-150119-0.2 | S | 15.01.19 | 1510 | | | | 15/1/19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Forwarded to
Secondary Lab
Initials **Sy** Date **17/1**

Environmental Division
Melbourne
Work Order Reference
EM1900448



Telephone : + 61-3-9649 9600

COC Page 1 of 1

please freeze bags for Acid Sulfate

ANZ
FQM - Generic Chain of Custody Form

| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: S. MacIntosh | | Destination Laboratory | |
|---|------------------------|------------------------------|----------|--|-------------|------------------------|--------------------|
| PROJECT MANAGER (PM): | | SITE: GUPP Groundwater Study | | MOBILE: | | ALS. | |
| PROJECT NUMBER & TASK CODE: 60592034 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: EN1606/13 | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | | | | | | |
| COOLER SEAL (circle appropriate) | | | | | | | |
| Intact: Yes No N/A | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes No | | | | | | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | | | |
| SPECIAL INFORMATION (note: S = Soil, W = Water) | | | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | Notes |
| 20 | CPT000-B408-150119-0.5 | S | 15.01.19 | 1515 | | 1516 | |
| 21 | CPT000-B408-150119-1.0 | S | | 1520 | | | X please freeze |
| 22 | CPT000-B408-150119-1.5 | S | | 1525 | | | X bags for acid |
| 23 | CPT000-B408-150119-2.0 | S | | 1530 | | | X sulfate analysis |
| 24 | CPT000-B408-150119-2.5 | S | | 1535 | | | X |
| 25 | CPT-00032-150119 | W | | - | | 4B | X |
| 26 | CPT-000412-150119 | W | | - | | 2B | X |
| 27 | CPT-000103-150119 | S | | - | | 15 | X |
| 28 | CPT-000203-150119 | S | | - | | 15 | X |
| 29 | CPT-000520 | W | | - | | 10 | X |
| | CPT-000521 | W | | - | | 10 | X |
| Extra Samples: | | | | | | | |
| 30 | MW15-02 | | | | | | |
| 31 | 0.5 | | | | | | |
| 32 | 1.0 | | | | | | |
| 33 | 1.5 | | | | | | |
| 34 | 2.0 | | | | | | |
| 35 | 2.5 | | | | | | |
| RECEIVED BY: RECEIVED BY: RECEIVED BY: | | | | | | | |
| Name: S. MacIntosh | | Name: Alice | | Name: | | METHOD OF SHIPMENT | |
| Date: 15.01.19 | | Date: 15/1/19 | | Date: | | Con't Note No: | |
| Time: 1630 | | Time: 5:55pm | | Time: | | Transport Co: | |
| Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Airfreight Unpreserved Plastic | | | | | | | |
| V = VOA Vial (HCl Preserved); VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; | | | | | | | |
| F = Formaldehyde Preserved Bottle; E = EDTA Preserved Bottle; Z = Zinc Acetate Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag. | | | | | | | |

Please freeze bags for acid sulfate analysis

COC Page 2 of 2

From: [REDACTED]@aecom.com>
Sent: Wednesday, 16 January 2019 3:11 PM
To: [REDACTED]
Subject: RE: EM1900447/EM1900448 - AECOMAU - 60592634

Hi [REDACTED]

Please analyse:

EM1900447

1. CPT002_BH102_150119_0.0= IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
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3. CPT002_BH102_150119_1.5 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
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5. CPT025_BH09_150119_1.0= IWRG621
6. CPT049B_BH17_150119_0.0= IWRG621
7. CPT049B_BH17_150119_1.0= IWRG621
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9. CPT002_BH102_150119_2.5 Chromium Suite (EA033)
10. CPT025_BH09_150119_0.5 = Chromium Suite (EA033)
11. CPT025_BH09_150119_1.0 = Chromium Suite (EA033)
12. CPT049B_BH17_150119_0.5 = Chromium Suite (EA033)
13. CPT049B_BH17_150119_1.5 = Chromium Suite (EA033)
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17. QC451_150119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
18. QC552_150119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
19. QC553_150119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)

Item 18 & 19 – analyse only the Trip Blank in esky that contains CPT002_BH102 samples.

EM1900448

1. CPT008_BH02_150119_0.2 = IWRG621 1
2. CPT008_BH02_150119_1.0 = IWRG621 3
3. CPT045_BH15_150119_0.5 = IWRG621 8
4. CPT045_BH15_150119_1.0 = IWRG621 9
5. CPT000_BH08_150119_0.2 = IWRG621 19
6. CPT000_BH08_150119_1.0 = IWRG621 21
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10. CPT008_BH02_150119_1.5 = Chromium Suite (EA033) 4
11. CPT045_BH15_150119_1.0 = Chromium Suite (EA033) 9
12. CPT045_BH15_150119_1.5 = Chromium Suite (EA033) 10
13. CPT000_BH08_150119_ = Chromium Suite (EA033) ?
14. CPT000_BH08_150119_ Chromium Suite (EA033) ?
15. CPT056_BH19_150119_0.5 = Chromium Suite (EA033) 14
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21. QC520_150119 = TPH(C6-C9)/BTEXN 28
22. QC521_150119 = TPH(C6-C9)/BTEXN 29

At standard TAT thanks!

Senior Environmental Engineer

[\[REDACTED\]@aecom.com](mailto:[REDACTED]@aecom.com)

AECOM

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From: [REDACTED]@alsglobal.com]

Sent: Wednesday, 16 January 2019 10:29 AM

To: [REDACTED]

Cc: [REDACTED]

Subject: EM1900447/EM1900448 - AECOMAU - 60592634

Hi [REDACTED]

Please find attached samples on hold

Thanks

Regards

[REDACTED]
Client Services – Springvale

Environmental



T +61 3 8549 9600

F +61 3 8549 9626

[\[REDACTED\]@alsglobal.com](mailto:[REDACTED]@alsglobal.com)

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Springvale Vic 3171

Australia

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[REDACTED]

From: [REDACTED]
Sent: Thursday, 17 January 2019 11:41 AM
To: [REDACTED]
Subject: FW: EM1900447/EM1900448 - AECOMAU - 60592634

Thanks [REDACTED]

See below

Regards

[REDACTED]
Client Services – Springvale
Environmental



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F +61 3 8549 9626
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Springvale Vic 3171
Australia

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From: [REDACTED]@aecom.com]
Sent: Thursday, 17 January 2019 11:39 AM
To: [REDACTED]@alsglobal.com>
Subject: RE: EM1900447/EM1900448 - AECOMAU - 60592634

Hi [REDACTED]

CPT000_BH08_0.5 and CPT000_BH08_1.0

Thanks!



Senior Environmental Engineer

[\[redacted\]@aecom.com](#)

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008

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[aecom.com](#)

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[LinkedIn](#) [Twitter](#) [Facebook](#) [Instagram](#)

From: [redacted]@alsglobal.com]

Sent: Thursday, 17 January 2019 11:37 AM

To: [redacted]

Subject: RE: EM1900447/EM1900448 - AECOMAU - 60592634

Hi [redacted]

Where Chromium Suite has been requested for the 'BH08' samples, the sample depths have not been referenced.

Are you able to confirm which of the BH08 samples (EM19004484) require Chromium Suite?

Thanks

Regards

[redacted]
Client Services – Springvale

Environmental



T +61 3 8549 9600

F +61 3 8549 9626

[\[redacted\]@alsglobal.com](#)

2-4 Westall Rd

Springvale Vic 3171

Australia

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SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900448

| | |
|--|---|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : GIJPP Groundwater Study</p> <p>Sampler : [REDACTED]</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 4</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|--|---|

Dates

| | |
|---|--|
| <p>Date Samples Received : 15-Jan-2019 17:55</p> <p>Client Requested Due : 23-Jan-2019</p> <p>Date : </p> | <p>Issue Date : 17-Jan-2019</p> <p>Scheduled Reporting Date : 23-Jan-2019</p> |
|---|--|

Delivery Details

| | |
|---|--|
| <p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 2</p> <p>Receipt Detail :</p> | <p>Security Seal : Intact.</p> <p>Temperature : -0.3°C - Ice present</p> <p>No. of samples received / analysed : 29 / 18</p> |
|---|--|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **QC312 to be filtered through a 0.45um filter prior to the dissolved metals analysis.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|----------------------------------|--|
| Dissolved Mercury by FIMS : EG035F | | |
| CPT_QC312_150119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite A : EG020A-F | | |
| CPT_QC312_150119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite B : EG020B-F | | |
| CPT_QC312_150119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

| | | |
|---------------|-------------------|--------------------------|
| EM1900448-001 | : [15-Jan-2019] | : CPT008_BH02_150119_0.2 |
| EM1900448-002 | : [15-Jan-2019] | : CPT008_BH02_150119_0.5 |
| EM1900448-003 | : [15-Jan-2019] | : CPT008_BH02_150119_1.0 |
| EM1900448-004 | : [15-Jan-2019] | : CPT008_BH02_150119_1.5 |
| EM1900448-008 | : [15-Jan-2019] | : CPT045_BH15_150119_0.5 |
| EM1900448-009 | : [15-Jan-2019] | : CPT045_BH15_150119_1.0 |
| EM1900448-010 | : [15-Jan-2019] | : CPT045_BH15_150119_1.5 |
| EM1900448-013 | : [15-Jan-2019] | : CPT056_BH19_150119_0.2 |
| EM1900448-014 | : [15-Jan-2019] | : CPT056_BH19_150119_0.5 |
| EM1900448-017 | : [15-Jan-2019] | : CPT056_BH19_150119_2.0 |
| EM1900448-019 | : [15-Jan-2019] | : CPT000_BH08_150119_0.2 |
| EM1900448-020 | : [15-Jan-2019] | : CPT000_BH08_150119_0.5 |
| EM1900448-021 | : [15-Jan-2019] | : CPT000_BH08_150119_1.0 |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
|----------------------|-----------------------------|-------------------------|---|--|--------------------------------------|-------------------------|
| EM1900448-001 | 15-Jan-2019 00:00 | CPT008_BH02_150119_0... | | | ✓ | ✓ |
| EM1900448-002 | 15-Jan-2019 00:00 | CPT008_BH02_150119_0... | | ✓ | | |
| EM1900448-003 | 15-Jan-2019 00:00 | CPT008_BH02_150119_1... | | | ✓ | ✓ |
| EM1900448-004 | 15-Jan-2019 00:00 | CPT008_BH02_150119_1... | | ✓ | | |
| EM1900448-005 | 15-Jan-2019 00:00 | CPT008_BH02_150119_2... | ✓ | | | |
| EM1900448-006 | 15-Jan-2019 00:00 | CPT008_BH02_150119_2... | ✓ | | | |
| EM1900448-007 | 15-Jan-2019 00:00 | CPT045_BH15_150119_0... | ✓ | | | |
| EM1900448-008 | 15-Jan-2019 00:00 | CPT045_BH15_150119_0... | | | ✓ | ✓ |
| EM1900448-009 | 15-Jan-2019 00:00 | CPT045_BH15_150119_1... | | ✓ | ✓ | ✓ |
| EM1900448-010 | 15-Jan-2019 00:00 | CPT045_BH15_150119_1... | | ✓ | | |
| EM1900448-011 | 15-Jan-2019 00:00 | CPT045_BH15_150119_2... | ✓ | | | |
| EM1900448-012 | 15-Jan-2019 00:00 | CPT045_BH15_150119_2... | ✓ | | | |
| EM1900448-013 | 15-Jan-2019 00:00 | CPT056_BH19_150119_0... | | | ✓ | ✓ |
| EM1900448-014 | 15-Jan-2019 00:00 | CPT056_BH19_150119_0... | | ✓ | ✓ | ✓ |
| EM1900448-015 | 15-Jan-2019 00:00 | CPT056_BH19_150119_1... | ✓ | | | |
| EM1900448-016 | 15-Jan-2019 00:00 | CPT056_BH19_150119_1... | ✓ | | | |
| EM1900448-017 | 15-Jan-2019 00:00 | CPT056_BH19_150119_2... | | ✓ | | |
| EM1900448-018 | 15-Jan-2019 00:00 | CPT056_BH19_150119_2... | ✓ | | | |



| | | | (On Hold) SOIL
No analysis requested | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
WRG 621 |
|---------------|-------------------|-------------------------|---|--|--------------------------------------|------------------------|
| EM1900448-019 | 15-Jan-2019 00:00 | CPT000_BH08_150119_0... | | | ✓ | ✓ |
| EM1900448-020 | 15-Jan-2019 00:00 | CPT000_BH08_150119_0... | | ✓ | | |
| EM1900448-021 | 15-Jan-2019 00:00 | CPT000_BH08_150119_1... | | ✓ | ✓ | ✓ |
| EM1900448-022 | 15-Jan-2019 00:00 | CPT000_BH08_150119_1... | ✓ | | | |
| EM1900448-023 | 15-Jan-2019 00:00 | CPT000_BH08_150119_2... | ✓ | | | |
| EM1900448-024 | 15-Jan-2019 00:00 | CPT000_BH08_150119_2... | ✓ | | | |
| EM1900448-027 | 15-Jan-2019 00:00 | CPT_QC103_150119 | | | ✓ | ✓ |

| | | | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------------------|
| Matrix: WATER | | | | |
| Laboratory sample ID | Client sampling date / time | Client sample ID | | |
| EM1900448-025 | 15-Jan-2019 00:00 | CPT_QC312_150119 | ✓ | |
| EM1900448-026 | 15-Jan-2019 00:00 | CPT_QC412_150119 | | ✓ |
| EM1900448-028 | 15-Jan-2019 00:00 | CPT_QC520 | | ✓ |
| EM1900448-029 | 15-Jan-2019 00:00 | CPT_QC521 | | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✓ = Within holding time.

| <div><div>□ □ □ □</div></div>
Client Sample ID(s) | Container | Due for
extraction | Due for
analysis | Samples Received | | Instructions Received | |
|--|--------------------------------|-----------------------|---------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| CPT_QC312_150119 | Clear Plastic Bottle - Natural | ---- | 15-Jan-2019 | 15-Jan-2019 | ✓ | 16-Jan-2019 | ✖ |



Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

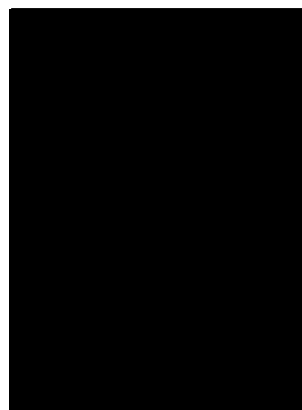
BRONWYN SHEEN

- PO Request Letter (PO_REQ)

Email bronwyn.sheen@alsglobal.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

Email
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**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1900448**

| | | | |
|--------------|--|--------------|--|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 4 |
| Order number | : ---- | Quote number | : EP2016AECOMAU0014 (EN/096/18) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : GIJPP Groundwater Study | | |
| Sampler | : [REDACTED] | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 15-Jan-2019 17:55 | Issue Date | : 17-Jan-2019 |
| Client Requested Due Date | : 23-Jan-2019 | Scheduled Reporting Date | : 23-Jan-2019 |

Delivery Details

| | | | |
|----------------------|-----------|------------------------------------|------------------------|
| Mode of Delivery | : Carrier | Security Seal | : Intact. |
| No. of coolers/boxes | : 2 | Temperature | : -0.3°C - Ice present |
| Receipt Detail | : | No. of samples received / analysed | : 29 / 17 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **QC312 to be filtered through a 0.45um filter prior to the dissolved metals analysis.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|----------------------------------|--|
| Dissolved Mercury by FIMS : EG035F | | |
| CPT_QC312_150119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite A : EG020A-F | | |
| CPT_QC312_150119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite B : EG020B-F | | |
| CPT_QC312_150119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

| | | |
|---------------|-------------------|--------------------------|
| EM1900448-001 | : [15-Jan-2019] | : CPT008_BH02_150119_0.2 |
| EM1900448-002 | : [15-Jan-2019] | : CPT008_BH02_150119_0.5 |
| EM1900448-003 | : [15-Jan-2019] | : CPT008_BH02_150119_1.0 |
| EM1900448-004 | : [15-Jan-2019] | : CPT008_BH02_150119_1.5 |
| EM1900448-008 | : [15-Jan-2019] | : CPT045_BH15_150119_0.5 |
| EM1900448-009 | : [15-Jan-2019] | : CPT045_BH15_150119_1.0 |
| EM1900448-010 | : [15-Jan-2019] | : CPT045_BH15_150119_1.5 |
| EM1900448-013 | : [15-Jan-2019] | : CPT056_BH19_150119_0.2 |
| EM1900448-014 | : [15-Jan-2019] | : CPT056_BH19_150119_0.5 |
| EM1900448-017 | : [15-Jan-2019] | : CPT056_BH19_150119_2.0 |
| EM1900448-019 | : [15-Jan-2019] | : CPT000_BH08_150119_0.2 |
| EM1900448-021 | : [15-Jan-2019] | : CPT000_BH08_150119_1.0 |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
WRG 621 |
|----------------------|-----------------------------|-------------------------|---|--|--------------------------------------|------------------------|
| EM1900448-001 | 15-Jan-2019 00:00 | CPT008_BH02_150119_0... | | | ✓ | ✓ |
| EM1900448-002 | 15-Jan-2019 00:00 | CPT008_BH02_150119_0... | | ✓ | | |
| EM1900448-003 | 15-Jan-2019 00:00 | CPT008_BH02_150119_1... | | | ✓ | ✓ |
| EM1900448-004 | 15-Jan-2019 00:00 | CPT008_BH02_150119_1... | | ✓ | | |
| EM1900448-005 | 15-Jan-2019 00:00 | CPT008_BH02_150119_2... | ✓ | | | |
| EM1900448-006 | 15-Jan-2019 00:00 | CPT008_BH02_150119_2... | ✓ | | | |
| EM1900448-007 | 15-Jan-2019 00:00 | CPT045_BH15_150119_0... | ✓ | | | |
| EM1900448-008 | 15-Jan-2019 00:00 | CPT045_BH15_150119_0... | | | ✓ | ✓ |
| EM1900448-009 | 15-Jan-2019 00:00 | CPT045_BH15_150119_1... | | ✓ | ✓ | ✓ |
| EM1900448-010 | 15-Jan-2019 00:00 | CPT045_BH15_150119_1... | | ✓ | | |
| EM1900448-011 | 15-Jan-2019 00:00 | CPT045_BH15_150119_2... | ✓ | | | |
| EM1900448-012 | 15-Jan-2019 00:00 | CPT045_BH15_150119_2... | ✓ | | | |
| EM1900448-013 | 15-Jan-2019 00:00 | CPT056_BH19_150119_0... | | | ✓ | ✓ |
| EM1900448-014 | 15-Jan-2019 00:00 | CPT056_BH19_150119_0... | | ✓ | ✓ | ✓ |
| EM1900448-015 | 15-Jan-2019 00:00 | CPT056_BH19_150119_1... | ✓ | | | |
| EM1900448-016 | 15-Jan-2019 00:00 | CPT056_BH19_150119_1... | ✓ | | | |
| EM1900448-017 | 15-Jan-2019 00:00 | CPT056_BH19_150119_2... | | ✓ | | |
| EM1900448-018 | 15-Jan-2019 00:00 | CPT056_BH19_150119_2... | ✓ | | | |
| EM1900448-019 | 15-Jan-2019 00:00 | CPT000_BH08_150119_0... | | | ✓ | ✓ |



| | | | (On Hold) SOIL
No analysis requested | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
WRG 621 |
|---------------|-------------------|-------------------------|---|--|--------------------------------------|------------------------|
| EM1900448-020 | 15-Jan-2019 00:00 | CPT000_BH08_150119_0... | ✓ | | | |
| EM1900448-021 | 15-Jan-2019 00:00 | CPT000_BH08_150119_1... | | | ✓ | ✓ |
| EM1900448-022 | 15-Jan-2019 00:00 | CPT000_BH08_150119_1... | ✓ | | | |
| EM1900448-023 | 15-Jan-2019 00:00 | CPT000_BH08_150119_2... | ✓ | | | |
| EM1900448-024 | 15-Jan-2019 00:00 | CPT000_BH08_150119_2... | ✓ | | | |
| EM1900448-027 | 15-Jan-2019 00:00 | CPT_QC103_150119 | | | ✓ | ✓ |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------------------|
| EM1900448-025 | 15-Jan-2019 00:00 | CPT_QC312_150119 | ✓ | |
| EM1900448-026 | 15-Jan-2019 00:00 | CPT_QC412_150119 | | ✓ |
| EM1900448-028 | 15-Jan-2019 00:00 | CPT_QC520 | | ✓ |
| EM1900448-029 | 15-Jan-2019 00:00 | CPT_QC521 | | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| <div><div></div><div></div><div></div></div>
Client Sample ID(s) | Container | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|---|--------------------------------|--------------------|------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| CPT_QC312_150119 | Clear Plastic Bottle - Natural | ---- | 15-Jan-2019 | 15-Jan-2019 | ✔ | 16-Jan-2019 | ✖ |

ACCOUNTS PAYABLE

- Email AP_CustomerService.ANZ@aeom.com

- Email [REDACTED]@alsglobal.com

- [illegible]

CERTIFICATE OF ANALYSIS

Work Order : **EM1900448**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 29
No. of samples analysed : 18

Page : 1 of 27
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 15-Jan-2019 17:55
Date Analysis Commenced : 17-Jan-2019
Issue Date : 23-Jan-2019 16:57



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|--------------------------|---|
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- QC312 was filtered through a 0.45µm filter prior to the dissolved metals analysis.
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- EG048G: EM1900448 #1 Poor matrix spike recovery for Hexavalent chromium due to matrix effects.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | | | | |
|---|------------|-------|-------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | | | | CPT008_BH02_15011
9_0.2 | CPT008_BH02_15011
9_0.5 | CPT008_BH02_15011
9_1.0 | CPT008_BH02_15011
9_1.5 | CPT045_BH15_15011
9_0.5 |
| Client sampling date / time | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:05 | 15-Jan-2019 09:10 | 15-Jan-2019 09:15 | 15-Jan-2019 11:50 |
| Compound | CAS Number | LOR | Unit | EM1900448-001 | EM1900448-002 | EM1900448-003 | EM1900448-004 | EM1900448-008 |
| | | | | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | 4.6 | ---- | 5.0 | ---- | 4.9 |
| EA033-A: Actual Acidity | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | ---- | 4.6 | ---- | 4.6 | ---- |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | ---- | 38 | ---- | 29 | ---- |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | ---- | 0.06 | ---- | 0.04 | ---- |
| EA033-B: Potential Acidity | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | ---- | 0.006 | ---- | 0.007 | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | ---- | <10 | ---- | <10 | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | ---- | 1.5 | ---- | 1.5 | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | ---- | 0.07 | ---- | 0.05 | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | 42 | ---- | 33 | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | 3 | ---- | 2 | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | 0.07 | ---- | 0.05 | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | 42 | ---- | 33 | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | 3 | ---- | 2 | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 12.9 | ---- | 21.7 | ---- | 7.3 |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | ---- | 8 | ---- | <5 |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 |
| Lead | 7439-92-1 | 5 | mg/kg | 6 | ---- | 12 | ---- | <5 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | ---- | <2 | ---- | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | 3 | ---- | 10 | ---- | 2 |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | ---- | <2 | ---- | <2 |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | ---- | <0.1 | ---- | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |



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(Matrix: SOIL) | | | | Client sample ID | CPT008_BH02_15011
9_0.2 | CPT008_BH02_15011
9_0.5 | CPT008_BH02_15011
9_1.0 | CPT008_BH02_15011
9_1.5 | CPT045_BH15_15011
9_0.5 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:05 | 15-Jan-2019 09:10 | 15-Jan-2019 09:15 | 15-Jan-2019 11:50 |
| Compound | CAS Number | LOR | Unit | | EM1900448-001 | EM1900448-002 | EM1900448-003 | EM1900448-004 | EM1900448-008 |
| | | | | | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 90 | ---- | 240 | ---- | 60 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | ---- | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | ---- | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | ---- | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | <0.4 | ---- | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | ---- | <0.04 | ---- | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |



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 (Matrix: SOIL)

Client sample ID

| | | | | CPT008_BH02_15011
9_0.2 | CPT008_BH02_15011
9_0.5 | CPT008_BH02_15011
9_1.0 | CPT008_BH02_15011
9_1.5 | CPT045_BH15_15011
9_0.5 |
|---|-------------------|------|-------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:05 | 15-Jan-2019 09:10 | 15-Jan-2019 09:15 | 15-Jan-2019 11:50 |
| Compound | CAS Number | LOR | Unit | EM1900448-001 | EM1900448-002 | EM1900448-003 | EM1900448-004 | EM1900448-008 |
| | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | ---- | <0.01 | ---- | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | <0.01 | ---- | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | <0.01 | ---- | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | ---- | <0.2 | ---- | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | ---- | <5 | ---- | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | <1 | ---- | <1 | ---- | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |



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Client sample ID

| | | | | CPT008_BH02_15011
9_0.2 | CPT008_BH02_15011
9_0.5 | CPT008_BH02_15011
9_1.0 | CPT008_BH02_15011
9_1.5 | CPT045_BH15_15011
9_0.5 |
|--|-------------------|------|-------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:05 | 15-Jan-2019 09:10 | 15-Jan-2019 09:15 | 15-Jan-2019 11:50 |
| Compound | CAS Number | LOR | Unit | EM1900448-001 | EM1900448-002 | EM1900448-003 | EM1900448-004 | EM1900448-008 |
| | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | 0.6 | ---- | 0.6 | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | 1.2 | ---- | 1.2 | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4.4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4.4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 |



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9_0.2 | CPT008_BH02_15011
9_0.5 | CPT008_BH02_15011
9_1.0 | CPT008_BH02_15011
9_1.5 | CPT045_BH15_15011
9_0.5 |
|--|--------------------------|-------|-------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:05 | 15-Jan-2019 09:10 | 15-Jan-2019 09:15 | 15-Jan-2019 11:50 |
| Compound | CAS Number | LOR | Unit | EM1900448-001 | EM1900448-002 | EM1900448-003 | EM1900448-004 | EM1900448-008 |
| | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | <10 | ---- | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | <10 | ---- | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | ---- | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | ---- | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | 100 | ---- | <100 | ---- | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | 100 | ---- | <50 | ---- | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | <10 | ---- | <10 |
| EP066S: PCB Surrogate | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 109 | ---- | 105 | ---- | 102 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 90.5 | ---- | 82.8 | ---- | 93.0 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 83.9 | ---- | 81.7 | ---- | 95.1 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 94.8 | ---- | 91.8 | ---- | 96.1 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 115 | ---- | 111 | ---- | 107 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 90.9 | ---- | 88.1 | ---- | 85.6 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT008_BH02_15011
9_0.2 | CPT008_BH02_15011
9_0.5 | CPT008_BH02_15011
9_1.0 | CPT008_BH02_15011
9_1.5 | CPT045_BH15_15011
9_0.5 |
|---|------------|-------|------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | 15-Jan-2019 09:00 | 15-Jan-2019 09:05 | 15-Jan-2019 09:10 | 15-Jan-2019 09:15 | 15-Jan-2019 11:50 |
| Compound | CAS Number | LOR | Unit | EM1900448-001 | EM1900448-002 | EM1900448-003 | EM1900448-004 | EM1900448-008 |
| | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 113 | ---- | 105 | ---- | 102 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 90.4 | ---- | 88.1 | ---- | 85.4 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 98.6 | ---- | 91.4 | ---- | 90.6 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 117 | ---- | 114 | ---- | 111 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 111 | ---- | 108 | ---- | 104 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 126 | ---- | 120 | ---- | 117 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | | | | |
|---|------------|-------|-------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | | | | CPT045_BH15_15011
9_1.0 | CPT045_BH15_15011
9_1.5 | CPT056_BH19_15011
9_0.2 | CPT056_BH19_15011
9_0.5 | CPT056_BH19_15011
9_2.0 |
| Client sampling date / time | | | | 15-Jan-2019 11:55 | 15-Jan-2019 12:00 | 15-Jan-2019 13:45 | 15-Jan-2019 13:50 | 15-Jan-2019 14:05 |
| Compound | CAS Number | LOR | Unit | EM1900448-009 | EM1900448-010 | EM1900448-013 | EM1900448-014 | EM1900448-017 |
| | | | | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | 5.4 | ---- | 7.2 | 6.4 | ---- |
| EA033-A: Actual Acidity | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.0 | 5.0 | ---- | 5.2 | 5.5 |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 23 | 14 | ---- | 10 | 8 |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.04 | 0.02 | ---- | <0.02 | <0.02 |
| EA033-B: Potential Acidity | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.006 | <0.005 | ---- | 0.014 | 0.023 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | ---- | <10 | 15 |
| EA033-E: Acid Base Accounting | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | ---- | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.04 | 0.02 | ---- | 0.03 | 0.04 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 27 | 14 | ---- | 18 | 23 |
| Liming Rate | ---- | 1 | kg CaCO3/t | 2 | 1 | ---- | 1 | 2 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.04 | 0.02 | ---- | 0.03 | 0.04 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 27 | 14 | ---- | 18 | 23 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 2 | 1 | ---- | 1 | 2 |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 22.9 | ---- | 20.5 | 17.5 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | 6 | ---- | <5 | 10 | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | ---- | <1 | <1 | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | <5 | ---- | 10 | <5 | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | 8 | ---- | 14 | <5 | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | ---- | <2 | 2 | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | 13 | ---- | 13 | 3 | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | ---- | <2 | <2 | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | <5 | ---- | 7 | <5 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | ---- | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |



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| | | | | | | | | | |
|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT045_BH15_15011
9_1.0 | CPT045_BH15_15011
9_1.5 | CPT056_BH19_15011
9_0.2 | CPT056_BH19_15011
9_0.5 | CPT056_BH19_15011
9_2.0 |
| Client sampling date / time | | | | | 15-Jan-2019 11:55 | 15-Jan-2019 12:00 | 15-Jan-2019 13:45 | 15-Jan-2019 13:50 | 15-Jan-2019 14:05 |
| Compound | CAS Number | LOR | Unit | | EM1900448-009 | EM1900448-010 | EM1900448-013 | EM1900448-014 | EM1900448-017 |
| | | | | Result | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 140 | ---- | 140 | 100 | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | <0.1 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | <0.4 | <0.4 | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | ---- | <0.04 | <0.04 | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT045_BH15_15011
9_1.0 | CPT045_BH15_15011
9_1.5 | CPT056_BH19_15011
9_0.2 | CPT056_BH19_15011
9_0.5 | CPT056_BH19_15011
9_2.0 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 15-Jan-2019 11:55 | 15-Jan-2019 12:00 | 15-Jan-2019 13:45 | 15-Jan-2019 13:50 | 15-Jan-2019 14:05 |
| Compound | CAS Number | LOR | Unit | | EM1900448-009 | EM1900448-010 | EM1900448-013 | EM1900448-014 | EM1900448-017 |
| | | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT045_BH15_15011
9_1.0 | CPT045_BH15_15011
9_1.5 | CPT056_BH19_15011
9_0.2 | CPT056_BH19_15011
9_0.5 | CPT056_BH19_15011
9_2.0 |
|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 15-Jan-2019 11:55 | 15-Jan-2019 12:00 | 15-Jan-2019 13:45 | 15-Jan-2019 13:50 | 15-Jan-2019 14:05 |
| Compound | CAS Number | LOR | Unit | | EM1900448-009 | EM1900448-010 | EM1900448-013 | EM1900448-014 | EM1900448-017 |
| | | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | ---- | 0.6 | 0.6 | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | ---- | 1.2 | 1.2 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 4.4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 4.4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT045_BH15_15011
9_1.0 | CPT045_BH15_15011
9_1.5 | CPT056_BH19_15011
9_0.2 | CPT056_BH19_15011
9_0.5 | CPT056_BH19_15011
9_2.0 |
|--|--------------------------|-------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 15-Jan-2019 11:55 | 15-Jan-2019 12:00 | 15-Jan-2019 13:45 | 15-Jan-2019 13:50 | 15-Jan-2019 14:05 |
| Compound | CAS Number | LOR | Unit | | EM1900448-009 | EM1900448-010 | EM1900448-013 | EM1900448-014 | EM1900448-017 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | <0.05 | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | <0.05 | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | <10 | <10 | <10 | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | <10 | <10 | <10 | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | <10 | <10 | <10 | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 102 | ---- | 107 | 111 | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 81.3 | ---- | 70.4 | 87.8 | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 99.9 | ---- | 80.8 | 86.9 | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 92.1 | ---- | 87.9 | 97.3 | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 117 | ---- | 120 | 114 | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 94.8 | ---- | 97.7 | 88.6 | ---- | ---- |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT045_BH15_15011
9_1.0 | CPT045_BH15_15011
9_1.5 | CPT056_BH19_15011
9_0.2 | CPT056_BH19_15011
9_0.5 | CPT056_BH19_15011
9_2.0 |
|---|------------|-------|------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | 15-Jan-2019 11:55 | 15-Jan-2019 12:00 | 15-Jan-2019 13:45 | 15-Jan-2019 13:50 | 15-Jan-2019 14:05 |
| Compound | CAS Number | LOR | Unit | EM1900448-009 | EM1900448-010 | EM1900448-013 | EM1900448-014 | EM1900448-017 |
| | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 113 | ---- | 117 | 114 | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 92.9 | ---- | 99.3 | 88.9 | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 93.8 | ---- | 106 | 89.8 | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 122 | ---- | 125 | 118 | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 116 | ---- | 119 | 114 | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 130 | ---- | 134 | 128 | ---- |



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|---|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|-------------------|------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH08_15011
9_0.2 | CPT000_BH08_15011
9_0.5 | CPT000_BH08_15011
9_1.0 | CPT_QC103_150119 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 15:10 | 15-Jan-2019 15:15 | 15-Jan-2019 15:20 | 15-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | EM1900448-019 | EM1900448-020 | EM1900448-021 | EM1900448-027 | ----- | |
| | | | | Result | Result | Result | Result | ---- | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | 4.4 | ---- | 5.2 | 5.0 | ---- | |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | ---- | 4.3 | 4.9 | ---- | ---- | |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | ---- | 50 | 18 | ---- | ---- | |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | ---- | 0.08 | 0.03 | ---- | ---- | |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | ---- | 0.008 | 0.009 | ---- | ---- | |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | ---- | <10 | <10 | ---- | ---- | |
| EA033-D: Retained Acidity | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | ---- | <0.02 | ---- | ---- | ---- | |
| HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | ---- | <0.02 | ---- | ---- | ---- | |
| Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | ---- | <0.02 | ---- | ---- | ---- | |
| acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | ---- | <10 | ---- | ---- | ---- | |
| sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | ---- | <0.02 | ---- | ---- | ---- | |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | ---- | 1.5 | 1.5 | ---- | ---- | |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | ---- | 0.09 | 0.04 | ---- | ---- | |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | 56 | 24 | ---- | ---- | |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | 4 | 2 | ---- | ---- | |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | 0.09 | 0.04 | ---- | ---- | |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | 56 | 24 | ---- | ---- | |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | 4 | 2 | ---- | ---- | |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 12.4 | ---- | 20.2 | 7.0 | ---- | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- | |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | ---- | <1 | <1 | ---- | |
| Copper | 7440-50-8 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- | |
| Lead | 7439-92-1 | 5 | mg/kg | 16 | ---- | 8 | <5 | ---- | |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | ---- | <2 | 4 | ---- | |
| Nickel | 7440-02-0 | 2 | mg/kg | 5 | ---- | 7 | 3 | ---- | |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- | |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | ---- | <2 | <2 | ---- | |



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|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|-------------------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH08_15011
9_0.2 | CPT000_BH08_15011
9_0.5 | CPT000_BH08_15011
9_1.0 | CPT_QC103_150119 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 15:10 | 15-Jan-2019 15:15 | 15-Jan-2019 15:20 | 15-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900448-019 | EM1900448-020 | EM1900448-021 | EM1900448-027 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EG005T: Total Metals by ICP-AES - Continued | | | | | | | | | |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | | 21 | ---- | <5 | <5 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | 1 | ---- | <1 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 110 | ---- | 200 | 40 | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | <0.1 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | <0.4 | <0.4 | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |



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|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|-------------------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH08_15011
9_0.2 | CPT000_BH08_15011
9_0.5 | CPT000_BH08_15011
9_1.0 | CPT_QC103_150119 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 15:10 | 15-Jan-2019 15:15 | 15-Jan-2019 15:20 | 15-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900448-019 | EM1900448-020 | EM1900448-021 | EM1900448-027 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | ---- | <0.04 | <0.04 | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |



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|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|-------------------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH08_15011
9_0.2 | CPT000_BH08_15011
9_0.5 | CPT000_BH08_15011
9_1.0 | CPT_QC103_150119 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 15:10 | 15-Jan-2019 15:15 | 15-Jan-2019 15:20 | 15-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900448-019 | EM1900448-020 | EM1900448-021 | EM1900448-027 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) - Continued | | | | | | | | | |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | ---- | <5 | <5 | <5 | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | <1 | ---- | <1 | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | 0.6 | ---- | 0.6 | 0.6 | 0.6 | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | 1.2 | ---- | 1.2 | 1.2 | 1.2 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |



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|---|--------------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|-------------------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH08_15011
9_0.2 | CPT000_BH08_15011
9_0.5 | CPT000_BH08_15011
9_1.0 | CPT_QC103_150119 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 15:10 | 15-Jan-2019 15:15 | 15-Jan-2019 15:20 | 15-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900448-019 | EM1900448-020 | EM1900448-021 | EM1900448-027 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | ---- | <10 | <10 | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | ---- | <50 | <50 | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | ---- | <10 | <10 | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | 160 | ---- | <100 | <100 | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | 170 | ---- | <100 | <100 | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | 330 | ---- | <50 | <50 | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | ---- | <50 | <50 | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | 260 | ---- | <100 | <100 | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | <100 | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | 260 | ---- | <50 | <50 | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | ---- | <50 | <50 | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | ---- | <10 | <10 | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 112 | ---- | 104 | 99.0 | ---- |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT000_BH08_15011
9_0.2 | CPT000_BH08_15011
9_0.5 | CPT000_BH08_15011
9_1.0 | CPT_QC103_150119 | ---- |
|---|------------|-------|------|----------------------------|----------------------------|----------------------------|-------------------|-------|
| Client sampling date / time | | | | 15-Jan-2019 15:10 | 15-Jan-2019 15:15 | 15-Jan-2019 15:20 | 15-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | EM1900448-019 | EM1900448-020 | EM1900448-021 | EM1900448-027 | ----- |
| | | | | Result | Result | Result | Result | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 86.2 | ---- | 76.2 | 92.8 | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 82.8 | ---- | 81.5 | 93.6 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 107 | ---- | 86.3 | 91.8 | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 125 | ---- | 105 | 101 | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 101 | ---- | 82.7 | 82.5 | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 134 | ---- | 99.4 | 97.4 | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 103 | ---- | 80.8 | 83.2 | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 109 | ---- | 86.0 | 86.9 | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 127 | ---- | 108 | 107 | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 124 | ---- | 103 | 99.8 | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 140 | ---- | 115 | 113 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC312_150119 | CPT_QC412_150119 | CPT_QC520 | CPT_QC521 | ---- |
|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900448-025 | EM1900448-026 | EM1900448-028 | EM1900448-029 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 5.28 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | <0.005 | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | <0.004 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC312_150119 | CPT_QC412_150119 | CPT_QC520 | CPT_QC521 | ---- |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900448-025 | EM1900448-026 | EM1900448-028 | EM1900448-029 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC312_150119 | CPT_QC412_150119 | CPT_QC520 | CPT_QC521 | ---- |
|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900448-025 | EM1900448-026 | EM1900448-028 | EM1900448-029 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |



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|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC312_150119 | CPT_QC412_150119 | CPT_QC520 | CPT_QC521 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900448-025 | EM1900448-026 | EM1900448-028 | EM1900448-029 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 63.0 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 93.8 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 93.4 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 96.3 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 22.4 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 46.4 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 38.6 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 57.9 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 57.4 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 59.6 | ---- | ---- | ---- | ---- |



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|---|------------|------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC312_150119 | CPT_QC412_150119 | CPT_QC520 | CPT_QC521 | ---- |
| Client sampling date / time | | | | | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900448-025 | EM1900448-026 | EM1900448-028 | EM1900448-029 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.25 | % | | 41.3 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.25 | % | | 88.2 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.25 | % | | 71.7 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.25 | % | | 95.4 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.25 | % | | 109 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.25 | % | | 97.4 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.25 | % | | 105 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.25 | % | | 81.6 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 98.9 | 96.1 | 99.4 | 93.0 | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 90.3 | 79.3 | 86.2 | 83.9 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 98.5 | 90.3 | 96.3 | 93.3 | ---- |



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|---|-------------------|-----------------|------|
| Sub-Matrix: SOIL | | □□□□ □ □□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

| | | | |
|---|-------------------|-----------------|------|
| Sub-Matrix: WATER | | □□□□ □ □□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 13 | 90 |
| 2-Chlorophenol-D4 | 93951-73-6 | 42 | 117 |
| 2,4,6-Tribromophenol | 118-79-6 | 52 | 140 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 49 | 136 |

| Sub-Matrix: WATER | | ☐☐☐☐ ☐ ☐☐☐ ☐☐ s ☐ | |
|--|------------|-------------------|-----|
| Compound | CAS Number | ☐☐% | ☐☐☐ |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 49 | 128 |
| 2-Fluorobiphenyl | 321-60-8 | 57 | 137 |
| Anthracene-d10 | 1719-06-8 | 67 | 137 |
| 4-Terphenyl-d14 | 1718-51-0 | 66 | 136 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900448 | Page | : 1 of 14 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 15-Jan-2019 17:55 |
| Order number | : ---- | Date Analysed | : 17-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 23-Jan-2019 16:58 |
| No. of samples received | : 29 | | |
| No. of samples analysed | : 18 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT008_BH02
_150119_0.2 | CPT008_BH02
_150119_1.0 | CPT045_BH15
_150119_0.5 | CPT045_BH15
_150119_1.0 | CPT056_BH19
_150119_0.2 |
|--|--------------|------|---------|--------------------|--------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | | | | Sampling date/time | | | | | | |
| | | | | | | | | | | |
| Compound | Method | LOR | Unit | | | 15-Jan-2019
09:00 | 15-Jan-2019
09:10 | 15-Jan-2019
11:50 | 15-Jan-2019
11:55 | 15-Jan-2019
13:45 |
| EM1900448-001 | | | | | | | | | | |
| EM1900448-003 | | | | | | | | | | |
| EM1900448-008 | | | | | | | | | | |
| EM1900448-009 | | | | | | | | | | |
| EM1900448-013 | | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 4.6 | 5.0 | 4.9 | 5.4 | 7.2 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | 8 | <5 | 6 | <5 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 | <5 | <5 | <5 | 10 |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 6 | 12 | <5 | 8 | 14 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 3 | 10 | 2 | 13 | 13 |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | <2 |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 | <5 | <5 | <5 | 7 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | <1 | <1 | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 90 | 240 | 60 | 140 | 140 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT008_BH02
_150119_0.2 | CPT008_BH02
_150119_1.0 | CPT045_BH15
_150119_0.5 | CPT045_BH15
_150119_1.0 | CPT056_BH19
_150119_0.2 |
|--|--------------|------|-------|------------------|---------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 15-Jan-2019
09:00 | 15-Jan-2019
09:10 | 15-Jan-2019
11:50 | 15-Jan-2019
11:55 | 15-Jan-2019
13:45 |
| Compound | Method | LOR | Unit | □□□□
□□□ □ | □□□□
□□□ □ | EM1900448-001 | EM1900448-003 | EM1900448-008 | EM1900448-009 | EM1900448-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | <50 | <50 | <50 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT008_BH02
_150119_0.2 | CPT008_BH02
_150119_1.0 | CPT045_BH15
_150119_0.5 | CPT045_BH15
_150119_1.0 | CPT056_BH19
_150119_0.2 | | |
|--|--------------|------|---------|--------------------|--------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | □□ □□
□□ □ | □□□□
□□ □ | | | | | | □□□□ □□ | □□□□ □□ |
| Compound | Method | LOR | Unit | | | EM1900448-001 | EM1900448-003 | EM1900448-008 | EM1900448-009 | EM1900448-013 | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.6 | 5.0 | 4.9 | 5.4 | 7.2 | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | 8 | <5 | 6 | <5 | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | <1 | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | <5 | <5 | <5 | <5 | 10 | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 6 | 12 | <5 | 8 | 14 | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | <2 | <2 | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 3 | 10 | 2 | 13 | 13 | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | <2 | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | <5 | <5 | <5 | <5 | 7 | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | <1 | <1 | <1 | <1 | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 90 | 240 | 60 | 140 | 140 | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | <1 | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | CPT008_BH02
_150119_0.2 | CPT008_BH02
_150119_1.0 | CPT045_BH15
_150119_0.5 | CPT045_BH15
_150119_1.0 | CPT056_BH19
_150119_0.2 |
|--|--------------|------|-------|------------------|--------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 15-Jan-2019
09:00 | 15-Jan-2019
09:10 | 15-Jan-2019
11:50 | 15-Jan-2019
11:55 | 15-Jan-2019
13:45 |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1900448-001 | EM1900448-003 | EM1900448-008 | EM1900448-009 | EM1900448-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | <50 | <50 | <50 | <50 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT008_BH02
_150119_0.2 | CPT008_BH02
_150119_1.0 | CPT045_BH15
_150119_0.5 | CPT045_BH15
_150119_1.0 | CPT056_BH19
_150119_0.2 |
|--|--------------|------|---------|--------------------|-----|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | | | 15-Jan-2019
09:00 | 15-Jan-2019
09:10 | 15-Jan-2019
11:50 | 15-Jan-2019
11:55 | 15-Jan-2019
13:45 |
| EM1900448-001 | | | | | | | | | | |
| EM1900448-003 | | | | | | | | | | |
| EM1900448-008 | | | | | | | | | | |
| EM1900448-009 | | | | | | | | | | |
| EM1900448-013 | | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.6 | 5.0 | 4.9 | 5.4 | 7.2 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | 8 | <5 | 6 | <5 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | <5 | <5 | <5 | <5 | 10 |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 6 | 12 | <5 | 8 | 14 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 3 | 10 | 2 | 13 | 13 |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | 7 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | <1 | <1 | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 90 | 240 | 60 | 140 | 140 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT008_BH02
_150119_0.2 | CPT008_BH02
_150119_1.0 | CPT045_BH15
_150119_0.5 | CPT045_BH15
_150119_1.0 | CPT056_BH19
_150119_0.2 |
|--|--------------|------|-------|--------------------|--------------|--------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 15-Jan-2019
09:00 | 15-Jan-2019
09:10 | 15-Jan-2019
11:50 | 15-Jan-2019
11:55 | 15-Jan-2019
13:45 |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900448-001 | EM1900448-003 | EM1900448-008 | EM1900448-009 | EM1900448-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | <50 | <50 | <50 | <50 | <50 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| Sub-Matrix: SOIL | | | | Client sample ID | | | | CPT056_BH19_150119_0.5 | CPT000_BH08_150119_0.2 | CPT000_BH08_150119_1.0 | CPT_QC103_1_50119 | ---- |
|--|--------------|------|---------|------------------|--------------|-------------------|-------------------|------------------------|------------------------|------------------------|-------------------|------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 15-Jan-2019 13:50 | 15-Jan-2019 15:10 | 15-Jan-2019 15:20 | 15-Jan-2019 15:00 | ----- | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | EM1900448-014 | EM1900448-019 | EM1900448-021 | EM1900448-027 | ----- | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 6.4 | 4.4 | 5.2 | 5.0 | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 10 | <5 | <5 | <5 | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 | <5 | <5 | <5 | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | <5 | 16 | 8 | <5 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | 2 | <2 | <2 | 4 | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 3 | 5 | 7 | 3 | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 | 21 | <5 | <5 | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | 1 | <1 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 100 | 110 | 200 | 40 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT056_BH19_150119_0.5 | CPT000_BH08_150119_0.2 | CPT000_BH08_150119_1.0 | CPT_QC103_1_50119 | ---- |
|--|--------------|------|-------|--------------------|---------|------------------------|------------------------|------------------------|-------------------|-------|
| | | | | Sampling date/time | | 15-Jan-2019 13:50 | 15-Jan-2019 15:10 | 15-Jan-2019 15:20 | 15-Jan-2019 15:00 | ---- |
| Compound | Method | LOR | Unit | □□□□ □□ | □□□□ □□ | EM1900448-014 | EM1900448-019 | EM1900448-021 | EM1900448-027 | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | 330 | <50 | <50 | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT056_BH19_150119_0.5 | CPT000_BH08_150119_0.2 | CPT000_BH08_150119_1.0 | CPT_QC103_150119 | ---- |
|--|--------------|------|---------|--------------------|--------------|------------------------|------------------------|------------------------|------------------|-------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | EM1900448-014 | EM1900448-019 | EM1900448-021 | EM1900448-027 | ----- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 6.4 | 4.4 | 5.2 | 5.0 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | 10 | <5 | <5 | <5 | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | <5 | <5 | <5 | <5 | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | <5 | 16 | 8 | <5 | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | 2 | <2 | <2 | 4 | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 3 | 5 | 7 | 3 | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | <5 | 21 | <5 | <5 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | 1 | <1 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 100 | 110 | 200 | 40 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT056_BH19
_150119_0.5 | CPT000_BH08
_150119_0.2 | CPT000_BH08
_150119_1.0 | CPT_QC103_1
50119 | ---- |
|--|--------------|------|-------|--------------------|---------|---------|----------------------------|----------------------------|----------------------------|----------------------|-------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 15-Jan-2019
13:50 | 15-Jan-2019
15:10 | 15-Jan-2019
15:20 | 15-Jan-2019
15:00 | ---- |
| | | | | | □□□□ | □□□□ | EM1900448-014 | EM1900448-019 | EM1900448-021 | EM1900448-027 | ----- |
| Compound | Method | LOR | Unit | | □□□□ | □□□□ | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 100 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 10 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 650 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 10000 | <50 | 330 | <50 | <50 | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| | | | | | | | | | | | | |
|--|--------------|------|---------|--------------------|---------|---------|---------|------------------------|------------------------|------------------------|-------------------|-------|
| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT056_BH19_150119_0.5 | CPT000_BH08_150119_0.2 | CPT000_BH08_150119_1.0 | CPT_QC103_150119 | ---- |
| | | | | Sampling date/time | | | | 15-Jan-2019 13:50 | 15-Jan-2019 15:10 | 15-Jan-2019 15:20 | 15-Jan-2019 15:00 | ---- |
| | | | | | | | | EM1900448-014 | EM1900448-019 | EM1900448-021 | EM1900448-027 | ----- |
| Compound | Method | LOR | Unit | □□ □□ | □□□□ □□ | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 6.4 | 4.4 | 5.2 | 5.0 | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | 10 | <5 | <5 | <5 | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | <5 | <5 | <5 | <5 | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | <5 | 16 | 8 | <5 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | 2 | <2 | <2 | 4 | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 3 | 5 | 7 | 3 | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | <5 | 21 | <5 | <5 | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | 1 | <1 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 100 | 110 | 200 | 40 | ---- | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management
Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | | |
|---|--------------|------|-------|------------------|------|-------|------------------------|------------------------|------------------------|------------------------|-------|
| Sub-Matrix: SOIL | | | | Client sample ID | | | CPT056_BH19_150119_0.5 | CPT000_BH08_150119_0.2 | CPT000_BH08_150119_1.0 | CPT_QC103_150119_50119 | ---- |
| Sampling date/time | | | | | | | 15-Jan-2019 13:50 | 15-Jan-2019 15:10 | 15-Jan-2019 15:20 | 15-Jan-2019 15:00 | ---- |
| Compound | Method | LOR | Unit | | | | EM1900448-014 | EM1900448-019 | EM1900448-021 | EM1900448-027 | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | 330 | <50 | <50 | <50 | ---- |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900448 | Page | : 1 of 20 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 15-Jan-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 17-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 23-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : GIJPP Groundwater Study | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 29 | | |
| No. of samples analysed | : 18 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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Senior Inorganic Chemist
Senior Inorganic Chemist
Senior Organic Chemist

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Melbourne Inorganics, Springvale, VIC
Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2145789) | | | | | | | | | |
| EM1900447-001 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.2 | 5.3 | 1.90 | 0% - 20% |
| EM1900448-003 | CPT008_BH02_150119_1.0 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.0 | 5.1 | 1.98 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2146395) | | | | | | | | | |
| EB1901387-001 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 6.7 | 6.5 | 3.03 | 0% - 20% |
| EM1900447-014 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 8 | 7 | 17.8 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 5.4 | 5.5 | 1.83 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2146395) | | | | | | | | | |
| EB1901387-001 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.011 | 0.010 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EM1900447-014 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.011 | 0.010 | 11.3 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2143480) | | | | | | | | | |
| EM1900447-019 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 20.8 | 21.2 | 2.04 | 0% - 20% |
| EM1900528-001 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 3.2 | 3.0 | 5.89 | No Limit |
| EG005T: Total Metals by ICP-AES (QC Lot: 2143330) | | | | | | | | | |
| EM1900447-015 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 11 | 12 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | | | |
|--|------------------------|---|------------|-----------------------------------|-----------|-----------------|------------------|---------|---------------------|------|----------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) | | |
| EG005T: Total Metals by ICP-AES (QC Lot: 2143330) - continued | | | | | | | | | | | |
| EM1900447-015 | Anonymous | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 10 | 12 | 16.0 | No Limit | | |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 18 | 14 | 20.9 | No Limit | | |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| EM1900448-021 | CPT000_BH08_150119_1.0 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit | | |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit | | |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 7 | 7 | 0.00 | No Limit | | |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit | | |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 8 | 11 | 21.9 | No Limit | | |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2143331) | | | | | | | | | |
| | | EM1900447-015 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | 0.2 | 0.2 | 0.00 | No Limit |
| EM1900448-021 | CPT000_BH08_150119_1.0 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit | | |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2145788) | | | | | | | | | | | |
| EM1900447-019 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| EM1900448-027 | CPT_QC103_150119 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2145801) | | | | | | | | | | | |
| EM1900447-019 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit | | |
| EM1900448-027 | CPT_QC103_150119 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit | | |
| EK040T: Fluoride Total (QC Lot: 2143627) | | | | | | | | | | | |
| EM1900447-019 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 250 | 290 | 13.2 | No Limit | | |
| EM1900448-027 | CPT_QC103_150119 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 40 | 50 | 0.00 | No Limit | | |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2141886) | | | | | | | | | | | |
| EM1900447-001 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit | | |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2141851) | | | | | | | | | | | |
| EM1900447-001 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit | | |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| | | | 106-42-3 | | | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|-------------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2141851) - continued | | | | | | | | | |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2141851) | | | | | | | | | |
| EM1900447-001 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2141851) | | | | | | | | | |
| EM1900447-001 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | | | | | | | | |
| | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2141851) - continued | | | | | | | | | |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit | | |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2141884) | | | | | | | | | |
| EM1900447-001 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2141884) | | | | | | | | | |
| EM1900447-001 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2141884) - continued | | | | | | | | | |
| EM1900447-001 | Anonymous | EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2141884) | | | | | | | | | |
| EM1900447-001 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP075-EM: Dibenzo(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|-----------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2141884) - continued | | | | | | | | | |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2141884) | | | | | | | | | |
| EM1900447-001 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2141884) - continued | | | | | | | | | |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2141851) | | | | | | | | | |
| EM1900447-001 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2141885) | | | | | | | | | |
| EM1900447-001 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2141851) | | | | | | | | | |
| EM1900447-001 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2141885) | | | | | | | | | |
| EM1900447-001 | Anonymous | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900448-008 | CPT045_BH15_150119_0.5 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2142716) | | | | | | | | | |
| EM1900521-010 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.86 | 7.87 | 0.127 | 0% - 20% |
| EM1900281-001 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 5.73 | 5.73 | 0.00 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2140967) | | | | | | | | | |
| EM1900447-020 | Anonymous | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2140969) | | | | | | | | | |
| EM1900461-008 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.112 | 0.113 | 0.935 | 0% - 20% |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2140969) - continued | | | | | | | | | |
| EM1900461-008 | Anonymous | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 0.002 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.036 | 0.036 | 0.00 | 0% - 20% |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.048 | 0.047 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900447-020 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2140968) | | | | | | | | | |
| EM1900447-020 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2141373) | | | | | | | | | |
| EM1900281-001 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2141022) | | | | | | | | | |
| EM1900280-010 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EM1900497-008 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | 0.032 | 0.032 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2142719) | | | | | | | | | |
| EM1900521-006 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.4 | 0.5 | 0.00 | No Limit |
| EM1900281-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2142592) | | | | | | | | | |
| EM1900402-025 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2142592) | | | | | | | | | |
| EM1900402-025 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|-------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2142592) - continued | | | | | | | | | |
| EM1900402-025 | Anonymous | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2142592) | | | | | | | | | |
| EM1900402-025 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2142592) | | | | | | | | | |
| EM1900402-025 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2142591) | | | | | | | | | |
| EM1900448-026 | CPT_QC412_150119 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900402-025 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2142591) | | | | | | | | | |
| EM1900448-026 | CPT_QC412_150119 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900402-025 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2142591) | | | | | | | | | |
| EM1900448-026 | CPT_QC412_150119 | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EM1900402-025 | Anonymous | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-------|-------------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | LCS | Low | High |
| EA033-A: Actual Acidity (QCLot: 2146395) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 88.9 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2146395) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 93.1 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-D: Retained Acidity (QCLot: 2146395) | | | | | | | | |
| EA033: Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA033: acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033: sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.02 | 0.052 % S | 89.8 | 70 | 130 |
| EA033: HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | <0.02 | 0.027 % S | 99.3 | 70 | 130 |
| EG005T: Total Metals by ICP-AES (QCLot: 2143330) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 89.1 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 86.1 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 90.4 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 89.0 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 102 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 92.6 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 97.2 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 91.4 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 104 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 94.8 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2143331) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 94.0 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2145788) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 89.3 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145801) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 99.0 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2143627) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 82.8 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2141886) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 115 | 63 | 118 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2141851) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 91.6 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 97.4 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 88.0 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 85.7 | 66 | 115 |
| | 106-42-3 | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 88.7 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 85.6 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2141851) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 96.5 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2141851) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 77.7 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 89.4 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 98.0 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 93.9 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 95.4 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 98.5 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 87.0 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 88.1 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 94.4 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.7 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 103 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 95.9 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 83.4 | 71 | 118 |
| EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 88.6 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.1 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 91.4 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.4 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.6 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 87.8 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2141884) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 127 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 110 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 125 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 114 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 65 | 124 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2141884) - continued | | | | | | | | |
| EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 116 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 90.8 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2141884) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 114 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 105 | 65 | 126 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 105 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 114 | 53 | 128 |
| EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 126 | 56 | 136 |
| EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 107 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 108 | 48 | 130 |
| EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 125 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 106 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 137 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2141884) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 123 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 118 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 122 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 122 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 114 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 56.6 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 117 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 111 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 119 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 114 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 108 | 70 | 130 |
| EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 126 | 72 | 134 |
| EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 128 | 72 | 135 |
| EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 129 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2141884) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 122 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 106 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 117 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 122 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 114 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 114 | 72 | 126 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|------|-------|-----------------------------|---------------------------------------|-------|--------------------|---------------------|
| Method: Compound | CAS Number | LOR | Unit | | Result | Spike | Spike Recovery (%) | Recovery Limits (%) |
| | | | | Concentration | | LCS | Low | High |
| EP075I: Organochlorine Pesticides (QCLot: 2141884) - continued | | | | | | | | |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 116 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 116 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 118 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 118 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 123 | 64 | 137 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 123 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 122 | 72 | 132 |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 144 | 42 | 160 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 80.5 | 55 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 126 | 73 | 132 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 130 | 75 | 134 |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 124 | 73 | 133 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 121 | 67 | 133 |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 120 | 67 | 135 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2141851) | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 96.6 | 63 | 122 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2141885) | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 101 | 70 | 120 |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 108 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 104 | 77 | 117 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2141851) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 94.6 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2141885) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 102 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 108 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 98.2 | 68 | 124 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|--------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
LowHigh | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2140967) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 97.5 | 84 | 116 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2140969) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 93.7 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 94.4 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 89.5 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 91.7 | 83 | 105 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|---------------------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| | | | | | | | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2140969) - continued | | | | | | | | |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 92.4 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 92.1 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 100 | 83 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 92.6 | 85 | 109 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2140968) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 90.9 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2141373) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 98.0 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2141022) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 85.3 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2142719) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 97.2 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2141229) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 75.7 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2142592) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 100 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2142592) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 95.7 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 96.7 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 107 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 87.6 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 94.5 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 82.2 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 73.2 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 95.9 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 92.4 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 100 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 91.5 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 81.6 | 76 | 112 |
| EP074: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 101 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 97.0 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2142592) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 97.5 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 94.0 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 95.0 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 98.2 | 64 | 122 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074G: Trihalomethanes (QCLot: 2142592) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 95.0 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2141230) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 77.1 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 74.4 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 75.6 | 53 | 117 |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 75.4 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 75.3 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 74.1 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 74.7 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 80.1 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 84.2 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 85.0 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2
205-82-3 | 1 | µg/L | <1.0 | 5 µg/L | 75.4 | 56 | 131 |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 81.1 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 78.0 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 77.6 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 76.9 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 78.0 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2141252) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 78.3 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 86.9 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 93.8 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 93.4 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 96.3 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 97.1 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 20 µg/L | 86.7 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 2 | µg/L | <2 | 40 µg/L | 65.1 | 53 | 125 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 98.2 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2141252) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 4 | µg/L | <4 | 10 µg/L | 36.1 | 18 | 51 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | 10 µg/L | 72.5 | 49 | 106 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | 20 µg/L | 66.2 | 41 | 91 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | 10 µg/L | 90.3 | 48 | 120 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | 10 µg/L | 84.8 | 47 | 128 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | 60 µg/L | 53.5 | 41 | 130 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | 60 µg/L | 28.5 | 19 | 49 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB) Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------|------|--------|--------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2141252) - continued | | | | | | | | |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | 60 µg/L | 97.8 | 47 | 126 |
| EP075-EM: Dinoseb | 88-85-7 | 50 | µg/L | <50 | 60 µg/L | 90.2 | 49 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | 50 µg/L | 93.4 | 61 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2141252) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 10 µg/L | 88.6 | 57 | 126 |
| EP075-EM: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 91.6 | 62 | 134 |
| EP075-EM: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 84.4 | 58 | 133 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 85.2 | 60 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 84.0 | 59 | 132 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 92.7 | 61 | 137 |
| EP075-EM: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 10 µg/L | 84.6 | 59 | 130 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 104 | 59 | 135 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | 10 µg/L | 118 | 59 | 128 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2141231) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 108 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 120 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 114 | 55 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2142591) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 91.2 | 65 | 126 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2141231) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 118 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 117 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 116 | 53 | 136 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2142591) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 92.7 | 64 | 124 |
| EP080: BTEXN (QCLot: 2142591) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 99.0 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 93.1 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 96.4 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 93.6 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 97.9 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 100 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2143330) | | | | | | | |
| EM1900447-019 | Anonymous | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 82.6 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 93.4 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 93.9 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 90.7 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 95.1 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 92.8 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 74.1 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 93.4 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2143331) | | | | | | | |
| EM1900447-019 | Anonymous | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 88.9 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2145788) | | | | | | | |
| EM1900448-001 | CPT008_BH02_150119_0.2 | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | # 26.8 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145801) | | | | | | | |
| EM1900448-001 | CPT008_BH02_150119_0.2 | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 102 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2143627) | | | | | | | |
| EM1900448-001 | CPT008_BH02_150119_0.2 | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 95.2 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2141886) | | | | | | | |
| EM1900447-007 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 106 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2141851) | | | | | | | |
| EM1900447-002 | Anonymous | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 81.5 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 81.0 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2141851) | | | | | | | |
| EM1900447-002 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 82.9 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 78.9 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 80.1 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2141884) | | | | | | | |
| EM1900447-002 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 115 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 130 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 51.0 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2141884) | | | | | | | |
| EM1900447-002 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 116 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 104 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2141884) | | | | | | | |
| EM1900447-002 | Anonymous | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 110 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 117 | 27 | 169 |

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|-------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2141851) | | | | | | | |
| EM1900447-002 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 72.6 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2141885) | | | | | | | |
| EM1900447-004 | Anonymous | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 100 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 108 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 103 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2141851) | | | | | | | |
| EM1900447-002 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 69.5 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2141885) | | | | | | | |
| EM1900447-004 | Anonymous | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 102 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 107 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 96.1 | 44 | 126 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|---|------------------|-----------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2140969) | | | | | | | |
| EM1900447-020 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 87.4 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 85.4 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 87.6 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 87.3 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 83.6 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 84.1 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2140968) | | | | | | | |
| EM1900448-025 | CPT_QC312_150119 | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 97.0 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2141373) | | | | | | | |
| EM1900447-020 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 98.6 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2141022) | | | | | | | |
| EM1900447-020 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 100 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2142719) | | | | | | | |
| EM1900448-025 | CPT_QC312_150119 | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 96.4 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2142592) | | | | | | | |
| EM1900402-039 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 112 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 87.3 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2142592) | | | | | | | |
| EM1900402-039 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 97.2 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2142591) | | | | | | | |

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 Work Order : EM1900448
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2142591) - continued | | | | | | | |
| EM1900402-039 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 79.0 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2142591) | | | | | | | |
| EM1900402-039 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 79.2 | 44 | 122 |
| EP080: BTEXN (QCLot: 2142591) | | | | | | | |
| EM1900402-039 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 103 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 96.2 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1900448**

Page : 1 of 15

Client : **AECOM Australia Pty Ltd**

Contact : [REDACTED]

Project : 60592634

Site : GIJPP Groundwater Study

Sampler : [REDACTED]

Order number :

Laboratory : Environmental Division Melbourne

Telephone : +6138549 9645

Date Samples Received : 15-Jan-2019

Issue Date : 23-Jan-2019

No. of samples received : 29

No. of samples analysed : 18

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------------|---------------------|------------|--------|---------|---|
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | EM1900448--001 | CPT008_BH02_150119_0.2 | Hexavalent Chromium | 18540-29-9 | 26.8 % | 58-114% | Recovery less than lower data quality objective |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
CPT_QC312_150119 | ---- | ---- | ---- | 18-Jan-2019 | 15-Jan-2019 | 3 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 15 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 2 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 2 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 17 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 15 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 2 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 2 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 17 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---------------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| Container / Client Sample ID(s) | | | | | | | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001) | | 15-Jan-2019 | 21-Jan-2019 | 22-Jan-2019 | ✓ | 21-Jan-2019 | 21-Jan-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA033) | | 15-Jan-2019 | 22-Jan-2019 | 15-Jan-2020 | ✓ | 22-Jan-2019 | 22-Apr-2019 | ✓ |
| CPT008_BH02_150119_0.5, | CPT008_BH02_150119_1.5, | | | | | | | |
| CPT045_BH15_150119_1.0, | CPT045_BH15_150119_1.5, | | | | | | | |
| CPT056_BH19_150119_0.5, | CPT056_BH19_150119_2.0, | | | | | | | |
| CPT000_BH08_150119_0.5, | CPT000_BH08_150119_1.0 | | | | | | | |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA033) | | 15-Jan-2019 | 22-Jan-2019 | 15-Jan-2020 | ✓ | 22-Jan-2019 | 22-Apr-2019 | ✓ |
| CPT008_BH02_150119_0.5, | CPT008_BH02_150119_1.5, | | | | | | | |
| CPT045_BH15_150119_1.0, | CPT045_BH15_150119_1.5, | | | | | | | |
| CPT056_BH19_150119_0.5, | CPT056_BH19_150119_2.0, | | | | | | | |
| CPT000_BH08_150119_0.5, | CPT000_BH08_150119_1.0 | | | | | | | |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen (EA033) | | 15-Jan-2019 | 22-Jan-2019 | 15-Jan-2020 | ✓ | 22-Jan-2019 | 22-Apr-2019 | ✓ |
| CPT008_BH02_150119_0.5, | CPT008_BH02_150119_1.5, | | | | | | | |
| CPT045_BH15_150119_1.0, | CPT045_BH15_150119_1.5, | | | | | | | |
| CPT056_BH19_150119_0.5, | CPT056_BH19_150119_2.0, | | | | | | | |
| CPT000_BH08_150119_0.5, | CPT000_BH08_150119_1.0 | | | | | | | |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA033) | | 15-Jan-2019 | 22-Jan-2019 | 15-Jan-2020 | ✓ | 22-Jan-2019 | 22-Apr-2019 | ✓ |
| CPT008_BH02_150119_0.5, | CPT008_BH02_150119_1.5, | | | | | | | |
| CPT045_BH15_150119_1.0, | CPT045_BH15_150119_1.5, | | | | | | | |
| CPT056_BH19_150119_0.5, | CPT056_BH19_150119_2.0, | | | | | | | |
| CPT000_BH08_150119_0.5, | CPT000_BH08_150119_1.0 | | | | | | | |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen (EA033) | | 15-Jan-2019 | 22-Jan-2019 | 15-Jan-2020 | ✓ | 22-Jan-2019 | 22-Apr-2019 | ✓ |
| CPT008_BH02_150119_0.5, | CPT008_BH02_150119_1.5, | | | | | | | |
| CPT045_BH15_150119_1.0, | CPT045_BH15_150119_1.5, | | | | | | | |
| CPT056_BH19_150119_0.5, | CPT056_BH19_150119_2.0, | | | | | | | |
| CPT000_BH08_150119_0.5, | CPT000_BH08_150119_1.0 | | | | | | | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055) | | 15-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 29-Jan-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T) | | 15-Jan-2019 | 21-Jan-2019 | 14-Jul-2019 | ✓ | 21-Jan-2019 | 14-Jul-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T) | | 15-Jan-2019 | 21-Jan-2019 | 12-Feb-2019 | ✓ | 22-Jan-2019 | 12-Feb-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G) | | 15-Jan-2019 | 21-Jan-2019 | 12-Feb-2019 | ✓ | 21-Jan-2019 | 28-Jan-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF) | | 15-Jan-2019 | 21-Jan-2019 | 29-Jan-2019 | ✓ | 22-Jan-2019 | 04-Feb-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T) | | 15-Jan-2019 | 21-Jan-2019 | 12-Feb-2019 | ✓ | 22-Jan-2019 | 12-Feb-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM) | | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 21-Jan-2019 | 27-Feb-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 15-Jan-2019 | 18-Jan-2019 | 22-Jan-2019 | ✓ | 21-Jan-2019 | 22-Jan-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 15-Jan-2019 | 18-Jan-2019 | 22-Jan-2019 | ✓ | 21-Jan-2019 | 22-Jan-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 15-Jan-2019 | 18-Jan-2019 | 22-Jan-2019 | ✓ | 21-Jan-2019 | 22-Jan-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 21-Jan-2019 | 27-Feb-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 21-Jan-2019 | 27-Feb-2019 | ✓ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✔ | 21-Jan-2019 | 27-Feb-2019 | ✔ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✔ | 21-Jan-2019 | 27-Feb-2019 | ✔ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 15-Jan-2019 | 18-Jan-2019 | 22-Jan-2019 | ✔ | 21-Jan-2019 | 22-Jan-2019 | ✔ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 15-Jan-2019 | 18-Jan-2019 | 22-Jan-2019 | ✔ | 21-Jan-2019 | 22-Jan-2019 | ✔ |
| CPT008_BH02_150119_0.2, | CPT008_BH02_150119_1.0, | | | | | | | |
| CPT045_BH15_150119_0.5, | CPT045_BH15_150119_1.0, | | | | | | | |
| CPT056_BH19_150119_0.2, | CPT056_BH19_150119_0.5, | | | | | | | |
| CPT000_BH08_150119_0.2, | CPT000_BH08_150119_1.0, | | | | | | | |
| CPT_QC103_150119 | | | | | | | | |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
CPT_QC312_150119 | 15-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 15-Jan-2019 | ✘ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Natural (EG020B-F)
CPT_QC312_150119 | 15-Jan-2019 | ---- | ---- | ---- | 17-Jan-2019 | 14-Jul-2019 | ✔ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Natural (EG035F)
CPT_QC312_150119 | 15-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 12-Feb-2019 | ✔ |

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Opaque plastic bottle - NaOH (EG050F)
CPT_QC312_150119 | 15-Jan-2019 | ---- | ---- | ---- | 17-Jan-2019 | 12-Feb-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| Opaque plastic bottle - NaOH (EK026SF)
CPT_QC312_150119 | 15-Jan-2019 | ---- | ---- | ---- | 17-Jan-2019 | 29-Jan-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
CPT_QC312_150119 | 15-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 12-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
CPT_QC312_150119 | 15-Jan-2019 | 21-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC312_150119 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC312_150119 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC312_150119 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC312_150119 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
CPT_QC312_150119 | 15-Jan-2019 | 21-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC312_150119 | 15-Jan-2019 | 17-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 26-Feb-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC312_150119 | 15-Jan-2019 | 17-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 26-Feb-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC312_150119 | 15-Jan-2019 | 17-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 26-Feb-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC312_150119 | 15-Jan-2019 | 21-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC312_150119,
CPT_QC520,
CPT_QC521 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |

Page : 8 of 15
 Work Order : EM1900448
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC312_150119 | 15-Jan-2019 | 21-Jan-2019 | 22-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC312_150119, CPT_QC520,
CPT_QC412_150119, CPT_QC521 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |
| EP080: BTEXN | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC312_150119, CPT_QC520,
CPT_QC412_150119, CPT_QC521 | 15-Jan-2019 | 18-Jan-2019 | 29-Jan-2019 | ✓ | 18-Jan-2019 | 29-Jan-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | Quality Control Specification | |
|---|----------|-------|---------|----------|----------|-------------------------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | | Evaluation |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 16 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 17 | 11.76 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 16 | 6.25 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 16 | 6.25 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Laboratory Control Samples (LCS)Method Blanks (MB)



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 15 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 2 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 2 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 17 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|--|
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazine. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |



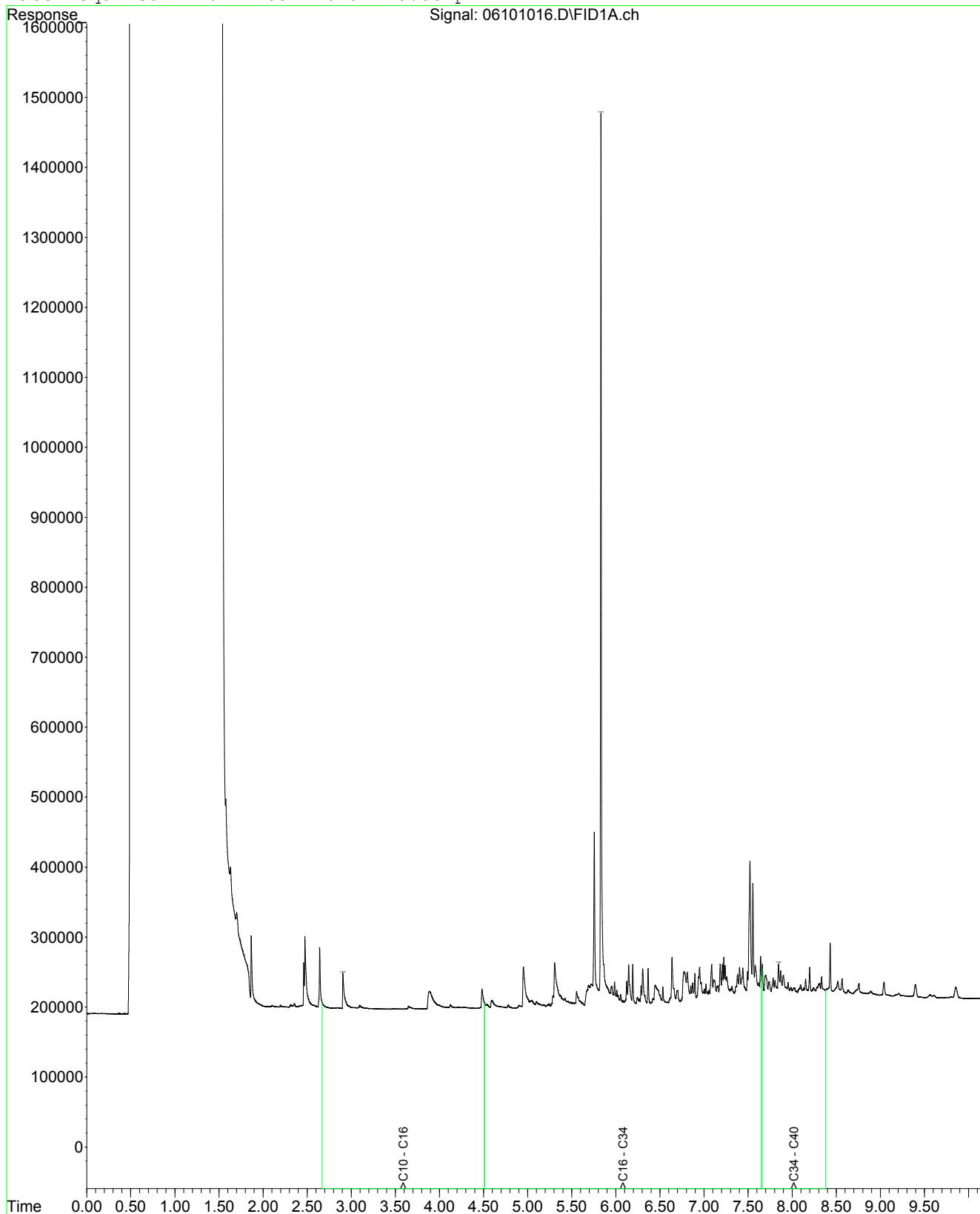
| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |

| Preparation Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|---|
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |

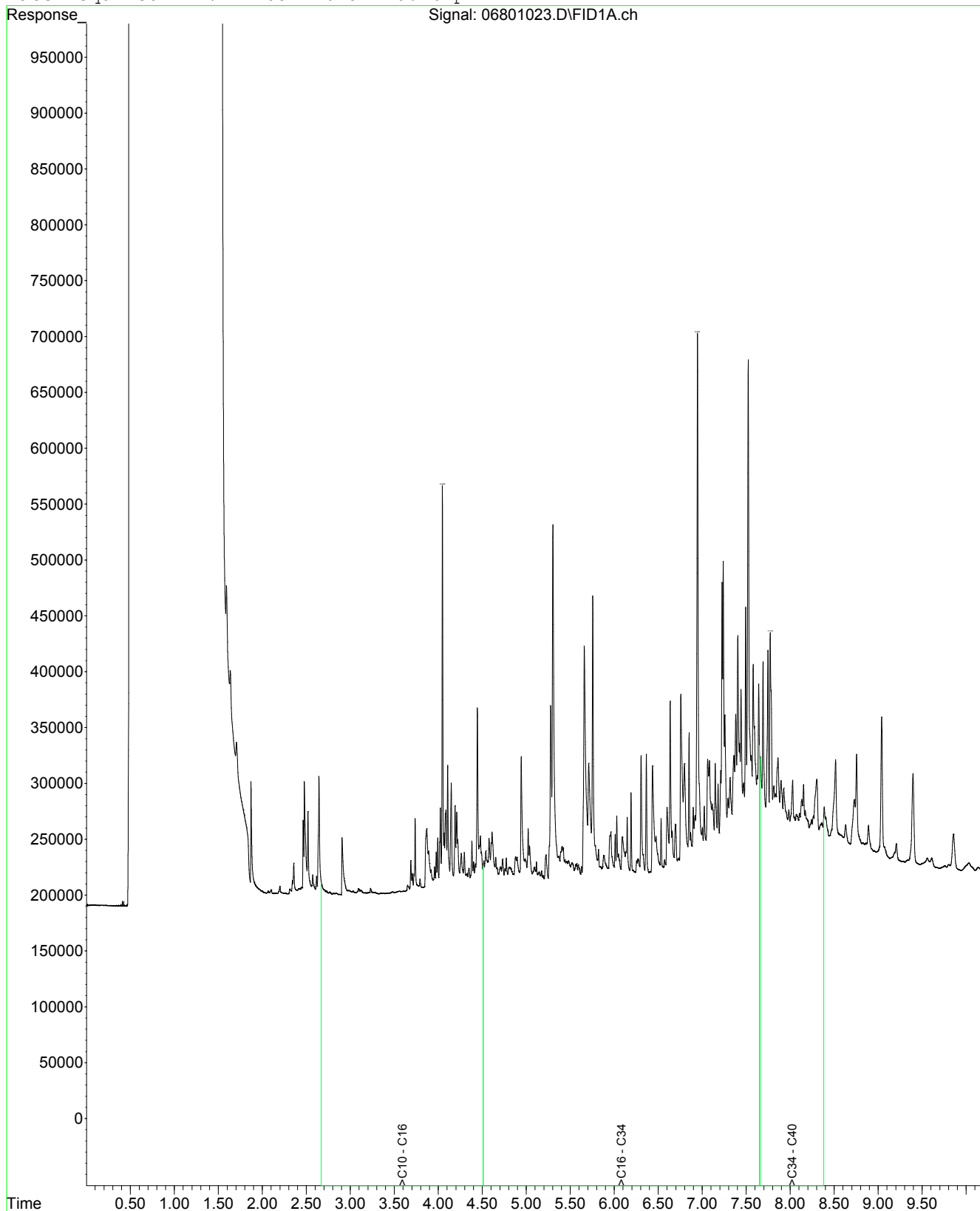


| Preparation Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|--|
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

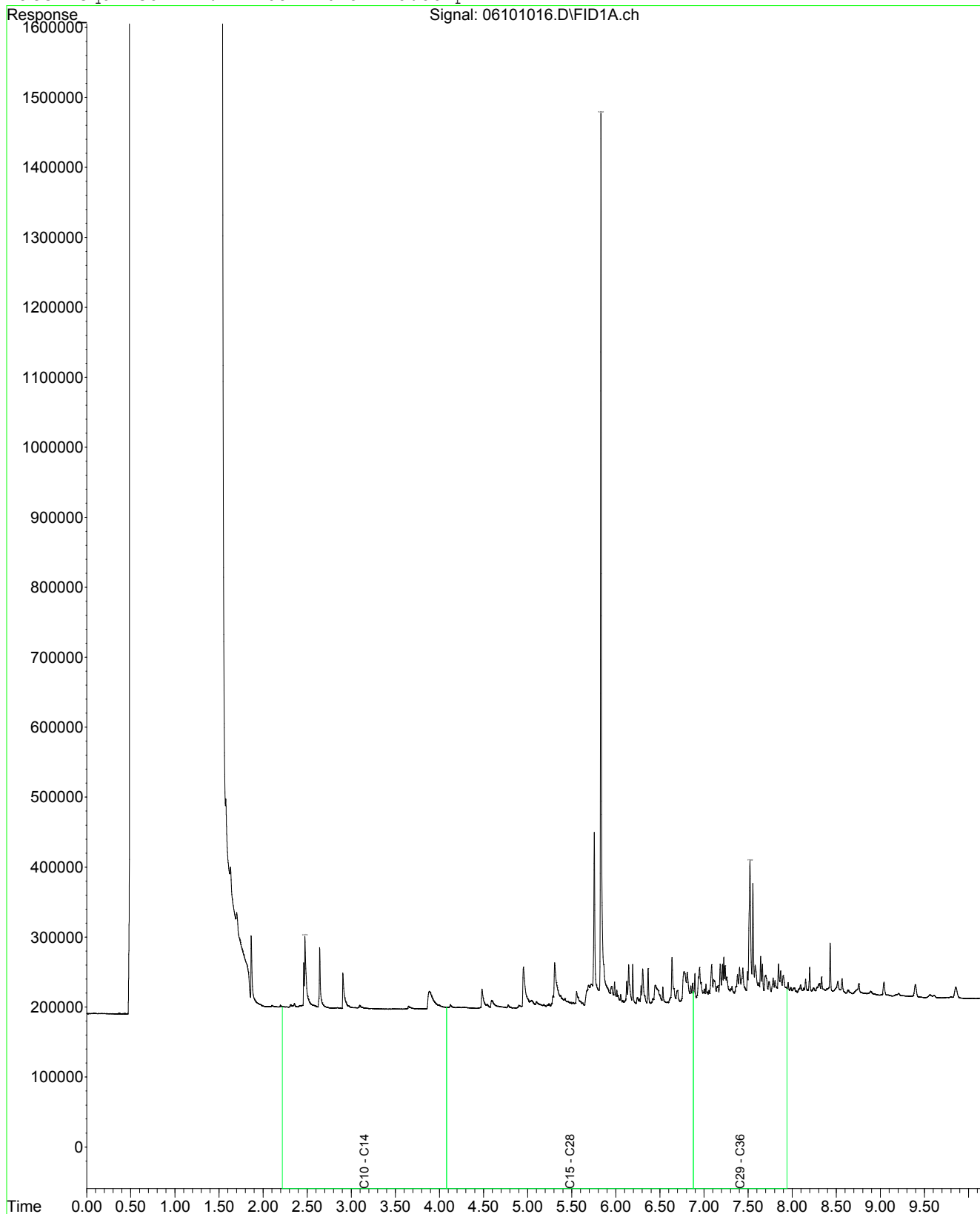
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Sample ID : CPT008_BH02_150119_0.2
Date Acquired : 21 Jan 2019 8:58 pm



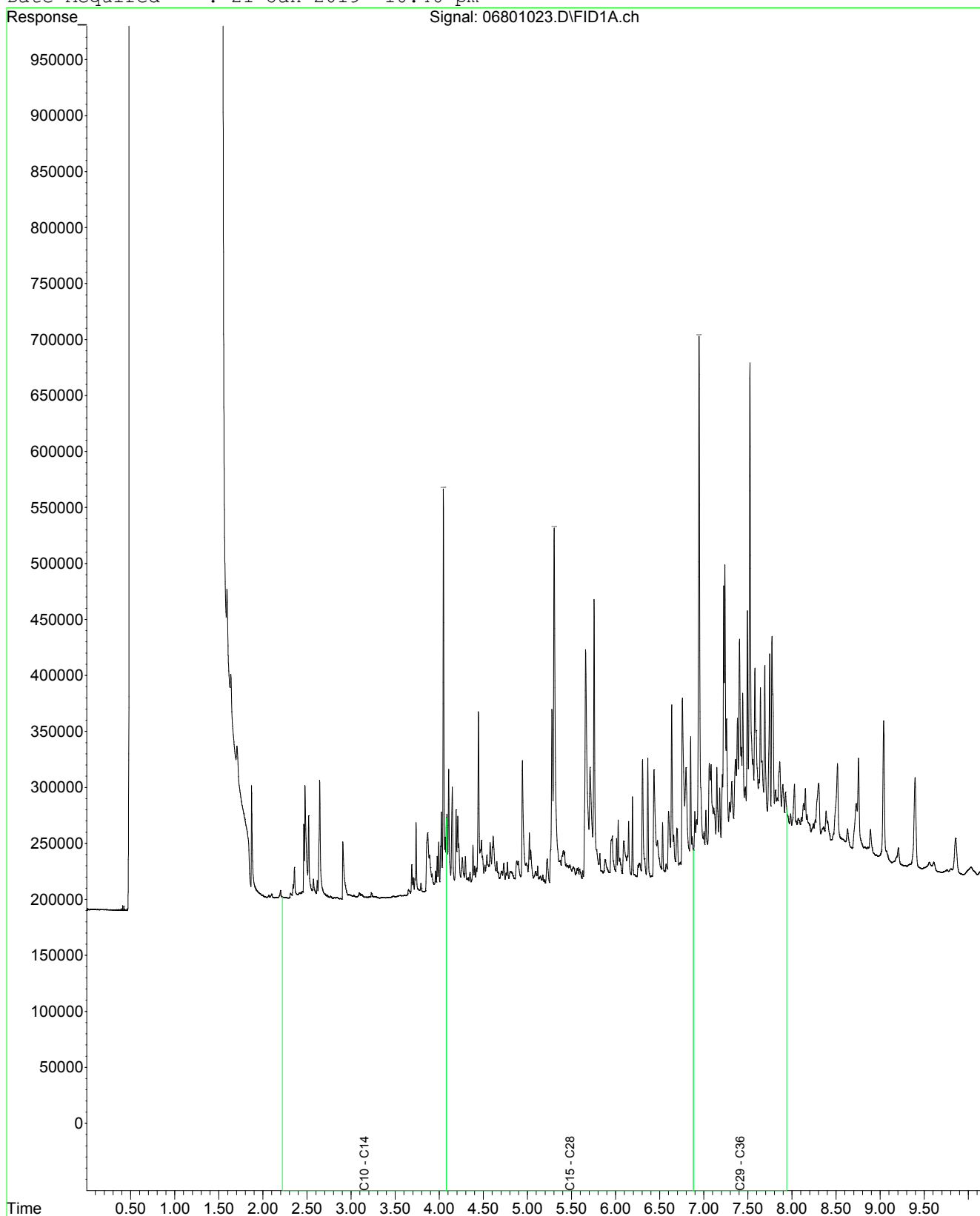
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Data File : 06801023.D
Laboratory Number: EM1900448-019
Sample ID : CPT000_BH08_150119_0.2
Date Acquired : 21 Jan 2019 10:46 pm



Fraction Scheme : Standard
Data File : 06101016.D
Laboratory Number: EM1900448-001
Sample ID : CPT008_BH02_150119_0.2
Date Acquired : 21 Jan 2019 8:58 pm



Fraction Scheme : Standard
Data File : 06801023.D
Laboratory Number: EM1900448-019
Sample ID : CPT000_BH08_150119_0.2
Date Acquired : 21 Jan 2019 10:46 pm




ANZ
FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|-------------------------|--|----------|--|-------------|------------------------|--|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: S. Maculloch | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: GUFP Groundwater Study | | MOBILE: | | PHONE: | |
| PROJECT NUMBER & TASK CODE: 60597634 | | P.O. NO.: | | EMAIL REPORT TO: | | ACS | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: EN1096/13 | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | |
| COOLER SEAL (void appropriate) | | | | | | | |
| Impact: Yes No N/A | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes No | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | CP1000-B407-160119-0.2 | S | 16.01.19 | 0810 | | 16 | |
| 2 | CP1000-B407-160119-0.5 | S | | 0815 | | | |
| 3 | CP1000-B407-160119-1.0 | S | | 0820 | | | |
| 4 | CP1000-B407-160119-1.5 | S | | 0825 | | | |
| 5 | CP1000-B407-160119-2.0 | S | | 0830 | | | |
| 6 | CP1000-B407-160119-2.5 | S | | 0835 | | | |
| 7 | CP1000-B405-160119-0.2 | S | | 1000 | | | |
| 8 | CP1000-B405-160119-0.5 | S | | 1005 | | | |
| 9 | CP1000-B405-160119-1.0 | S | | 1010 | | | |
| 10 | CP1000-B405-160119-1.5 | S | | 1015 | | | |
| 11 | CP1000-B405-160119-2.0 | S | | 1020 | | | |
| 12 | CP1000-B405-160119-2.5 | S | | 1025 | | | |
| 13 | CP1011W-B403-160119-0.2 | S | | 1215 | | | |
| 14 | CP1011W-B403-160119-0.5 | S | | 1220 | | | |
| 15 | CP1011W-B403-160119-1.0 | S | | 1225 | | | |
| 16 | CP1011W-B403-160119-1.5 | S | | 1230 | | | |
| 17 | CP1011W-B403-160119-2.0 | S | | 1235 | | | |
| 18 | CP1011W-B403-160119-2.5 | S | | 1240 | | | |
| 19 | CP1011W-B403-160119-0.2 | S | | 1420 | | | |

Notes: e.g. Highly contaminated sample
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc.

Environmental Division
Melbourne
Work Order Reference
EM1900529

Barcode: 

Telephone: + 61-3-8549 9600

RECEIVED BY: **Alice** Date: **16/1/19** Time: **17:40**

RECEIVED BY: **Alice** Date: **16/1/19** Time: **1630**

RELINQUISHED BY: **S. Maculloch** Date: **16.01.19** Time: **1630**

Off: **AECOM**

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airflight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airflight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Salts; B = Unpreserved Bag.

Soil Container Codes: Jar = Unpreserved glass jar

please freeze bags for acid sulfate analysis.

COC Page 1 of 2

FQM - Generic Chain of Custody Form

| CONSULTANT: ALISON | | ADDRESS/OFFICE: | | SAMPLER: S. McCallion | | Destination Laboratory | | | | | |
|---|-----------------------|-------------------------------------|----------|--|--------------|------------------------|------|--|--|--|--|
| PROJECT MANAGER (PM): | | SITE: GUFP Groundwater Study | | MOBILE: | | | | | | | |
| PROJECT NUMBER & TASK CODE: 60592034 | | P.O. NO.: | | EMAIL REPORT TO: | | | | | | | |
| ANALYSIS REQUIRED (Date): | | QUOTE NO.: EN1096/19 | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | | | | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
FOR LABORATORY USE ONLY:
COOLER SEAL (circle appropriate)
Intact: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
SAMPLE TEMPERATURE
CHILLED: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | HOLD
YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| SAMPLE INFORMATION note: S = Soil, W = Water | | | | | | | | | | | |
| CONTAINER INFORMATION | | DATE | | TIME | | Total bottles | | | | | |
| SAMPLE ID | SAMPLE ID | MATRIX | DATE | TIME | Types / Code | | | | | | |
| 20 | CP061-BH22-160119-0.5 | S | 16.01.19 | 1425 | | | 1516 | | | | |
| 21 | CP061-BH22-160119-1.0 | S | | 1430 | | | | | | | |
| 22 | CP061-BH22-160119-1.5 | S | | 1435 | | | | | | | |
| 23 | CP061-BH22-160119-2.0 | S | | 1440 | | | | | | | |
| 24 | CP061-BH22-160119-2.5 | S | | 1445 | | | | | | | |
| 25 | CP061-BH22-160119 | W | | | | | | | | | |
| 26 | CP061-BH22-160119 | W | | | | | | | | | |
| 27 | CP061-BH22-160119 | W | | | | | | | | | |
| 28 | CP061-BH22-160119 | W | | | | | | | | | |
| 29 | CP061-BH22-160119 | W | | | | | | | | | |
| Notes: e.g. Highly contaminated sample
e.g. "High PAHs expected"
Extra volume for QC or trace LORs etc. | | | | | | | | | | | |

Please freeze bags for Acid Sulfate Analysis.

From: [REDACTED]@aecom.com>
Sent: Thursday, 17 January 2019 2:37 PM
To: [REDACTED]
Subject: RE: EM1900529 - AECOMAU - 60592634

Hi [REDACTED]

Please analyse:

Lab
in

- 1 1. CPT000_BH07_160119_0.2 = IWRG621
- 3 2. CPT000_BH07_160119_1.0 = IWRG621
- 7 3. CPT000_BH05_160119_0.2 = IWRG621
- 9 4. CPT000_BH05_160119_1.0 = IWRG621
- 13 5. CPT011W_BH03_160119_0.2 = IWRG621
- 14 6. CPT011W_BH03_160119_0.5 = IWRG621
- 17 7. CPT061_BH22_160119_0.2 = IWRG621
- 22 8. CPT061_BH22_160119_1.5 = IWRG621
- 2 9. CPT000_BH07_160119_0.5 = SPOCAS
- 3 10. CPT000_BH07_160119_1.0 = SPOCAS
- 8 11. CPT000_BH05_160119_0.5 = Chromium Suite (EA033)
- 10 12. CPT000_BH05_160119_1.5 = Chromium Suite (EA033)
- 14 13. CPT011W_BH03_160119_0.5 = Chromium Suite (EA033)
- 16 14. CPT011W_BH03_160119_1.5 = Chromium Suite (EA033)
- 20 15. CPT061_BH22_160119_0.5 = Chromium Suite (EA033)
- 21 16. CPT061_BH22_160119_1.0 = Chromium Suite (EA033)
- 23 17. QC313_150119 = IWRG621 water equivalent
- 26 18. QC413_150119 = TPH(C6-C9)/BTEXN
- 27 19. QC522_150119 = TPH(C6-C9)/BTEXN
- 28 20. QC523_150119 = TPH(C6-C9)/BTEXN
- 29 21. QC524_150119 = TPH(C6-C9)/BTEXN

At standard TAT thanks!

[REDACTED]
Senior Environmental Engineer

[REDACTED]
@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

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From: [REDACTED]@alsglobal.com]
Sent: Wednesday, 16 January 2019 6:07 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: EM1900529 - AECOMAU - 60592634

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1900529**

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 4 |
| Order number | : ---- | Quote number | : EP2016AECOMAU0014 (EN/096/18) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : GIJPP | | |
| Sampler | : SM | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 16-Jan-2019 17:40 | Issue Date | : 17-Jan-2019 |
| Client Requested Due Date | : 25-Jan-2019 | Scheduled Reporting Date | : 25-Jan-2019 |

Delivery Details

| | | | |
|----------------------|-------------|------------------------------------|-----------------------|
| Mode of Delivery | : Undefined | Security Seal | : Intact. |
| No. of coolers/boxes | : 3 | Temperature | : 2.1°C - Ice present |
| Receipt Detail | : | No. of samples received / analysed | : 29 / 19 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **The scheduled reporting date has been extended due to analytical testing conducted by ALS interstate laboratories. Please refer to your quotation for further information.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale & ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

| | | |
|---------------|---------------------|---------------------------|
| EM1900529-001 | : 16-Jan-2019 08:10 | : CPT000_BH07_160119_0.2 |
| EM1900529-002 | : 16-Jan-2019 08:15 | : CPT000_BH07_160119_0.5 |
| EM1900529-003 | : 16-Jan-2019 08:20 | : CPT000_BH07_160119_1.0 |
| EM1900529-007 | : 16-Jan-2019 10:00 | : CPT000_BH05_160119_0.2 |
| EM1900529-008 | : 16-Jan-2019 10:05 | : CPT000_BH05_160119_0.5 |
| EM1900529-009 | : 16-Jan-2019 10:10 | : CPT000_BH05_160119_1.0 |
| EM1900529-010 | : 16-Jan-2019 10:15 | : CPT000_BH05_160119_1.5 |
| EM1900529-013 | : 16-Jan-2019 12:15 | : CPT011W_BH03_160119_0.2 |
| EM1900529-014 | : 16-Jan-2019 12:20 | : CPT011W_BH03_160119_0.5 |
| EM1900529-016 | : 16-Jan-2019 12:30 | : CPT011W_BH03_160119_1.5 |
| EM1900529-019 | : 16-Jan-2019 14:20 | : CPT061_BH22_160119_0.2 |
| EM1900529-020 | : 16-Jan-2019 14:25 | : CPT061_BH22_160119_0.5 |
| EM1900529-021 | : 16-Jan-2019 14:30 | : CPT061_BH22_160119_1.0 |
| EM1900529-022 | : 16-Jan-2019 14:35 | : CPT061_BH22_160119_1.5 |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: SOIL

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IMRG 621 |
|----------------------|-----------------------------|-------------------------|---|------------------------|--|--------------------------------------|-------------------------|
| EM1900529-001 | 16-Jan-2019 08:10 | CPT000_BH07_160119_0... | | | | ✓ | ✓ |
| EM1900529-002 | 16-Jan-2019 08:15 | CPT000_BH07_160119_0... | | ✓ | | | |
| EM1900529-003 | 16-Jan-2019 08:20 | CPT000_BH07_160119_1... | | ✓ | | ✓ | ✓ |
| EM1900529-004 | 16-Jan-2019 08:25 | CPT000_BH07_160119_1... | ✓ | | | | |
| EM1900529-005 | 16-Jan-2019 08:30 | CPT000_BH07_160119_2... | ✓ | | | | |
| EM1900529-006 | 16-Jan-2019 08:35 | CPT000_BH07_160119_2... | ✓ | | | | |
| EM1900529-007 | 16-Jan-2019 10:00 | CPT000_BH05_160119_0... | | | | ✓ | ✓ |
| EM1900529-008 | 16-Jan-2019 10:05 | CPT000_BH05_160119_0... | | | ✓ | | |
| EM1900529-009 | 16-Jan-2019 10:10 | CPT000_BH05_160119_1... | | | | ✓ | ✓ |
| EM1900529-010 | 16-Jan-2019 10:15 | CPT000_BH05_160119_1... | | | ✓ | | |
| EM1900529-011 | 16-Jan-2019 10:20 | CPT000_BH05_160119_2... | ✓ | | | | |
| EM1900529-012 | 16-Jan-2019 10:25 | CPT000_BH05_160119_2... | ✓ | | | | |
| EM1900529-013 | 16-Jan-2019 12:15 | CPT011W_BH03_160119_. | | | | ✓ | ✓ |
| EM1900529-014 | 16-Jan-2019 12:20 | CPT011W_BH03_160119_. | | | ✓ | ✓ | ✓ |
| EM1900529-015 | 16-Jan-2019 12:25 | CPT011W_BH03_160119_. | ✓ | | | | |
| EM1900529-016 | 16-Jan-2019 12:30 | CPT011W_BH03_160119_. | | | ✓ | | |
| EM1900529-017 | 16-Jan-2019 12:35 | CPT011W_BH03_160119_. | ✓ | | | | |
| EM1900529-018 | 16-Jan-2019 12:40 | CPT011W_BH03_160119_. | ✓ | | | | |
| EM1900529-019 | 16-Jan-2019 14:20 | CPT061_BH22_160119_0... | | | | ✓ | ✓ |
| EM1900529-020 | 16-Jan-2019 14:25 | CPT061_BH22_160119_0... | | | ✓ | | |
| EM1900529-021 | 16-Jan-2019 14:30 | CPT061_BH22_160119_1... | | | ✓ | | |
| EM1900529-022 | 16-Jan-2019 14:35 | CPT061_BH22_160119_1... | | | | ✓ | ✓ |



| | | | | | | | |
|---------------|-------------------|-------------------------|---|------------------------|--|--------------------------------------|-------------------------|
| | | | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
| EM1900529-023 | 16-Jan-2019 14:40 | CPT061_BH22_160119_2... | ✓ | | | | |
| EM1900529-024 | 16-Jan-2019 14:45 | CPT061_BH22_160119_2... | ✓ | | | | |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
V/C EPA IWRG621 - Water Equivalent Suite | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------------------|
| EM1900529-025 | 16-Jan-2019 00:00 | CPT_QC313_160119 | ✓ | |
| EM1900529-026 | 16-Jan-2019 00:00 | CPT_QC413_160119 | | ✓ |
| EM1900529-027 | 16-Jan-2019 00:00 | CPT_QC522 | | ✓ |
| EM1900529-028 | 16-Jan-2019 00:00 | CPT_QC523 | | ✓ |
| EM1900529-029 | 16-Jan-2019 00:00 | CPT_QC524 | | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

| Method | Container | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|----------------------------|--------------------------------|--------------------|------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| CPT_QC313_160119 | Clear Plastic Bottle - Natural | ---- | 16-Jan-2019 | 16-Jan-2019 | ✓ | 17-Jan-2019 | ✗ |



Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- [REDACTED]
- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

Email
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CERTIFICATE OF ANALYSIS

Work Order : **EM1900529**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP
Quote number : EN/096/18
No. of samples received : 29
No. of samples analysed : 19

Page : 1 of 28
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 16-Jan-2019 17:40
Date Analysis Commenced : 18-Jan-2019
Issue Date : 25-Jan-2019 17:22



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|----------------------------------|---|
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m³ in-situ soil, multiply reported results x wet bulk density of soil in t/m³.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



□ □ □ □ □ □ □ □ □ □ □ □

| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH07_16011
9_0.2 | CPT000_BH07_16011
9_0.5 | CPT000_BH07_16011
9_1.0 | CPT000_BH05_16011
9_0.2 | CPT000_BH05_16011
9_0.5 |
|---|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 16-Jan-2019 08:10 | 16-Jan-2019 08:15 | 16-Jan-2019 08:20 | 16-Jan-2019 10:00 | 16-Jan-2019 10:05 |
| Compound | CAS Number | LOR | Unit | | EM1900529-001 | EM1900529-002 | EM1900529-003 | EM1900529-007 | EM1900529-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 4.6 | ---- | 5.7 | 4.4 | ---- |
| EA029-A: pH Measurements | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 4.7 | 5.3 | ---- | ---- |
| pH OX (23B) | ---- | 0.1 | pH Unit | | ---- | 4.9 | 5.5 | ---- | ---- |
| EA029-B: Acidity Trail | | | | | | | | | |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | 27 | 15 | ---- | ---- |
| Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | | ---- | 43 | 25 | ---- | ---- |
| Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | | ---- | 16 | 10 | ---- | ---- |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.020 | % pyrite S | | ---- | 0.044 | 0.024 | ---- | ---- |
| sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.020 | % pyrite S | | ---- | 0.069 | 0.040 | ---- | ---- |
| sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.020 | % pyrite S | | ---- | 0.025 | <0.020 | ---- | ---- |
| EA029-C: Sulfur Trail | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.020 | % S | | ---- | <0.020 | 0.023 | ---- | ---- |
| Peroxide Sulfur (23De) | ---- | 0.020 | % S | | ---- | 0.021 | 0.025 | ---- | ---- |
| Peroxide Oxidisable Sulfur (23E) | ---- | 0.020 | % S | | ---- | 0.021 | <0.020 | ---- | ---- |
| acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | | ---- | 13 | <10 | ---- | ---- |
| EA029-D: Calcium Values | | | | | | | | | |
| KCl Extractable Calcium (23Vh) | ---- | 0.020 | % Ca | | ---- | 0.040 | 0.036 | ---- | ---- |
| Peroxide Calcium (23Wh) | ---- | 0.020 | % Ca | | ---- | 0.058 | 0.041 | ---- | ---- |
| Acid Reacted Calcium (23X) | ---- | 0.020 | % Ca | | ---- | <0.020 | <0.020 | ---- | ---- |
| acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | ---- |
| sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.020 | % S | | ---- | <0.020 | <0.020 | ---- | ---- |
| EA029-E: Magnesium Values | | | | | | | | | |
| KCl Extractable Magnesium (23Sm) | ---- | 0.020 | % Mg | | ---- | 0.089 | 0.099 | ---- | ---- |
| Peroxide Magnesium (23Tm) | ---- | 0.020 | % Mg | | ---- | 0.095 | 0.108 | ---- | ---- |
| Acid Reacted Magnesium (23U) | ---- | 0.020 | % Mg | | ---- | <0.020 | <0.020 | ---- | ---- |
| Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | ---- |
| sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.020 | % S | | ---- | <0.020 | <0.020 | ---- | ---- |
| EA029-H: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | 1.5 | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | 0.06 | 0.02 | ---- | ---- |



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|---|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH07_16011
9_0.2 | CPT000_BH07_16011
9_0.5 | CPT000_BH07_16011
9_1.0 | CPT000_BH05_16011
9_0.2 | CPT000_BH05_16011
9_0.5 |
| Client sampling date / time | | | | | 16-Jan-2019 08:10 | 16-Jan-2019 08:15 | 16-Jan-2019 08:20 | 16-Jan-2019 10:00 | 16-Jan-2019 10:05 |
| Compound | CAS Number | LOR | Unit | | EM1900529-001 | EM1900529-002 | EM1900529-003 | EM1900529-007 | EM1900529-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA029-H: Acid Base Accounting - Continued | | | | | | | | | |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | 40 | 16 | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | 3 | 1 | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | 0.06 | 0.02 | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | 40 | 16 | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | 3 | 1 | ---- | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | ---- | ---- | ---- | ---- | ---- | 4.5 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | ---- | ---- | ---- | ---- | ---- | 40 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | ---- | ---- | ---- | ---- | ---- | 0.06 |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | ---- | ---- | ---- | ---- | ---- | 0.007 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | ---- | ---- | ---- | ---- | ---- | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | ---- | ---- | ---- | ---- | ---- | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | ---- | ---- | ---- | ---- | ---- | 0.07 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | ---- | ---- | ---- | ---- | 45 |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | ---- | ---- | ---- | ---- | 3 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | ---- | ---- | ---- | ---- | 0.07 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | ---- | ---- | ---- | ---- | 45 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | ---- | ---- | ---- | ---- | 3 |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 12.2 | ---- | 24.1 | 5.6 | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | ---- | <1 | <1 | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | 9 | ---- | 6 | 26 | ---- | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | ---- | <2 | <2 | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | 3 | ---- | 4 | 3 | ---- | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | ---- | <2 | <2 | ---- | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | <5 | ---- | <5 | 9 | ---- | ---- |



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(Matrix: SOIL) | | | | Client sample ID | CPT000_BH07_16011
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9_0.2 | CPT000_BH05_16011
9_0.5 |
|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 16-Jan-2019 08:10 | 16-Jan-2019 08:15 | 16-Jan-2019 08:20 | 16-Jan-2019 10:00 | 16-Jan-2019 10:05 |
| Compound | CAS Number | LOR | Unit | EM1900529-001 | EM1900529-002 | EM1900529-003 | EM1900529-007 | EM1900529-008 | |
| | | | | Result | Result | Result | Result | Result | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | ---- | <0.1 | <0.1 | ---- | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | ---- | <1 | <1 | ---- | |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | 130 | ---- | 210 | 70 | ---- | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | ---- | <0.1 | <0.1 | ---- | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | ---- | <0.2 | <0.2 | ---- | |
| Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | |
| Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | <0.2 | ---- | <0.2 | <0.2 | ---- | |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | <1 | ---- | <1 | <1 | ---- | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | <0.02 | ---- | |
| 1.1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | ---- | <0.01 | <0.01 | ---- | |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | ---- | <0.4 | <0.4 | ---- | |
| trans-1.2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | <0.02 | ---- | |
| cis-1.2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | ---- | <0.01 | <0.01 | ---- | |
| Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | <0.02 | ---- | |
| 1.1.1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | ---- | <0.01 | <0.01 | ---- | |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | ---- | <0.01 | <0.01 | ---- | |
| 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | <0.02 | ---- | |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | <0.02 | ---- | |
| 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | ---- | <0.04 | <0.04 | ---- | |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | <0.02 | ---- | |

| | | | | Client sampling date / time | 16-Jan-2019 08:10 | 16-Jan-2019 08:15 | 16-Jan-2019 08:20 | 16-Jan-2019 10:00 | 16-Jan-2019 10:05 |
|--|-------------------|------|-------|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Compound | CAS Number | LOR | Unit | | EM1900529-001 | EM1900529-002 | EM1900529-003 | EM1900529-007 | EM1900529-008 |
| | | | | Result | Result | Result | Result | Result | |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | ---- | | <0.01 | <0.01 | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | ---- | | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | ---- | | <0.02 | <0.02 | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | ---- | | <0.02 | <0.02 | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | ---- | | <0.02 | <0.02 | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | ---- | | <0.02 | <0.02 | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | ---- | | <0.01 | <0.01 | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | | <0.01 | <0.01 | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | ---- | | <0.03 | <0.03 | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | ---- | | <0.03 | <0.03 | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | ---- | | <0.03 | <0.03 | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | ---- | | <0.03 | <0.03 | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | ---- | | <0.05 | <0.05 | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | ---- | | <0.05 | <0.05 | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | ---- | | <0.03 | <0.03 | ---- |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | ---- | | <0.05 | <0.05 | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | ---- | | <0.2 | <0.2 | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | ---- | | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | <1 | ---- | | <1 | <1 | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | ---- | | <1 | <1 | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | ---- | | <1 | <1 | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | ---- | | <1 | <1 | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | ---- | | <1 | <1 | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | ---- | | <5 | <5 | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | ---- | | <5 | <5 | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | ---- | | <5 | <5 | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | <5 | ---- | | <5 | <5 | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | ---- | | <5 | <5 | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | <1 | ---- | | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |



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(Matrix: SOIL) | | | | Client sample ID | CPT000_BH07_16011
9_0.2 | CPT000_BH07_16011
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9_0.5 |
|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 16-Jan-2019 08:10 | 16-Jan-2019 08:15 | 16-Jan-2019 08:20 | 16-Jan-2019 10:00 | 16-Jan-2019 10:05 |
| Compound | CAS Number | LOR | Unit | | EM1900529-001 | EM1900529-002 | EM1900529-003 | EM1900529-007 | EM1900529-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | ---- | 0.6 | 0.6 | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | ---- | 1.2 | 1.2 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |



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9_0.5 |
|--|--------------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
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| Compound | CAS Number | LOR | Unit | | EM1900529-001 | EM1900529-002 | EM1900529-003 | EM1900529-007 | EM1900529-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | <0.05 | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | <0.05 | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | <0.05 | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | <10 | <10 | <10 | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | <10 | <10 | <10 | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | <10 | <10 | <10 | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 101 | ---- | 99.4 | 98.6 | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 77.0 | ---- | 70.5 | 73.8 | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 74.7 | ---- | 70.0 | 75.4 | ---- | ---- |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT000_BH07_16011
9_0.2 | CPT000_BH07_16011
9_0.5 | CPT000_BH07_16011
9_1.0 | CPT000_BH05_16011
9_0.2 | CPT000_BH05_16011
9_0.5 |
|---|------------|-------|------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | 16-Jan-2019 08:10 | 16-Jan-2019 08:15 | 16-Jan-2019 08:20 | 16-Jan-2019 10:00 | 16-Jan-2019 10:05 |
| Compound | CAS Number | LOR | Unit | EM1900529-001 | EM1900529-002 | EM1900529-003 | EM1900529-007 | EM1900529-008 |
| | | | | Result | Result | Result | Result | Result |
| EP074S: VOC Surrogates (Ultra-Trace) - Continued | | | | | | | | |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 86.0 | ---- | 80.4 | 79.4 | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 103 | ---- | 100.0 | 97.0 | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 84.1 | ---- | 80.1 | 83.1 | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 95.9 | ---- | 90.1 | 96.7 | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 101 | ---- | 96.4 | 97.0 | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 93.5 | ---- | 88.7 | 89.7 | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 108 | ---- | 104 | 101 | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 103 | ---- | 99.4 | 96.8 | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 98.5 | ---- | 95.6 | 95.0 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH05_16011
9_1.0 | CPT000_BH05_16011
9_1.5 | CPT011W_BH03_1601
19_0.2 | CPT011W_BH03_1601
19_0.5 | CPT011W_BH03_1601
19_1.5 |
|---|------------|-------|-------------|------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 16-Jan-2019 10:10 | 16-Jan-2019 10:15 | 16-Jan-2019 12:15 | 16-Jan-2019 12:20 | 16-Jan-2019 12:30 |
| Compound | CAS Number | LOR | Unit | | EM1900529-009 | EM1900529-010 | EM1900529-013 | EM1900529-014 | EM1900529-016 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 4.3 | ---- | 4.6 | 5.6 | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 4.6 | ---- | 5.2 | 5.4 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | 24 | ---- | 23 | 11 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | 0.04 | ---- | 0.04 | <0.02 |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | 0.005 | ---- | 0.005 | 0.005 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | <10 | ---- | <10 | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | ---- | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | 0.04 | ---- | 0.04 | 0.02 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | 27 | ---- | 26 | 15 |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | 2 | ---- | 2 | 1 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | 0.04 | ---- | 0.04 | 0.02 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | 27 | ---- | 26 | 15 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | 2 | ---- | 2 | 1 |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 20.4 | ---- | 11.5 | 25.0 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | <5 | ---- | 6 | 8 | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | | 10 | ---- | 12 | 11 | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | <2 | ---- | <2 | <2 | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | | 8 | ---- | 7 | 17 | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | ---- | <2 | <2 | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | | <5 | ---- | 18 | <5 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | 0.2 | ---- | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | 0.5 | ---- | <0.5 | <0.5 | ---- |



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|--|-------------------|------|-------|------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH05_16011
9_1.0 | CPT000_BH05_16011
9_1.5 | CPT011W_BH03_1601
19_0.2 | CPT011W_BH03_1601
19_0.5 | CPT011W_BH03_1601
19_1.5 |
| Client sampling date / time | | | | | 16-Jan-2019 10:10 | 16-Jan-2019 10:15 | 16-Jan-2019 12:15 | 16-Jan-2019 12:20 | 16-Jan-2019 12:30 |
| Compound | CAS Number | LOR | Unit | | EM1900529-009 | EM1900529-010 | EM1900529-013 | EM1900529-014 | EM1900529-016 |
| | | | | Result | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | <1 | ---- | 1 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 210 | ---- | 120 | 220 | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | <0.1 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | <0.4 | <0.4 | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | ---- | <0.04 | <0.04 | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT000_BH05_16011
9_1.0 | CPT000_BH05_16011
9_1.5 | CPT011W_BH03_1601
19_0.2 | CPT011W_BH03_1601
19_0.5 | CPT011W_BH03_1601
19_1.5 |
|---|-------------------|------|-------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 16-Jan-2019 10:10 | 16-Jan-2019 10:15 | 16-Jan-2019 12:15 | 16-Jan-2019 12:20 | 16-Jan-2019 12:30 |
| Compound | CAS Number | LOR | Unit | EM1900529-009 | EM1900529-010 | EM1900529-013 | EM1900529-014 | EM1900529-016 |
| | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | ---- | <0.01 | <0.01 | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | <0.01 | <0.01 | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | ---- | <0.2 | <0.2 | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | <1 | ---- | <1 | <1 | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | ---- | <1 | <1 | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | ---- | <1 | <1 | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | ---- | <1 | <1 | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | ---- | <1 | <1 | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | ---- | <5 | <5 | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | <1 | ---- | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT000_BH05_16011
9_1.0 | CPT000_BH05_16011
9_1.5 | CPT011W_BH03_1601
19_0.2 | CPT011W_BH03_1601
19_0.5 | CPT011W_BH03_1601
19_1.5 |
|--|-------------------|------|-------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 16-Jan-2019 10:10 | 16-Jan-2019 10:15 | 16-Jan-2019 12:15 | 16-Jan-2019 12:20 | 16-Jan-2019 12:30 |
| Compound | CAS Number | LOR | Unit | EM1900529-009 | EM1900529-010 | EM1900529-013 | EM1900529-014 | EM1900529-016 |
| | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | 0.6 | ---- | 0.6 | 0.6 | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | 1.2 | ---- | 1.2 | 1.2 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 4.4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 4.4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH05_16011
9_1.0 | CPT000_BH05_16011
9_1.5 | CPT011W_BH03_1601
19_0.2 | CPT011W_BH03_1601
19_0.5 | CPT011W_BH03_1601
19_1.5 |
|--|--------------------------|-------|-------|------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 16-Jan-2019 10:10 | 16-Jan-2019 10:15 | 16-Jan-2019 12:15 | 16-Jan-2019 12:20 | 16-Jan-2019 12:30 |
| Compound | CAS Number | LOR | Unit | | EM1900529-009 | EM1900529-010 | EM1900529-013 | EM1900529-014 | EM1900529-016 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | <0.05 | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | <0.05 | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | <10 | <10 | <10 | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | <10 | <10 | <10 | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | ---- | 120 | <100 | <100 | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | <100 | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | 120 | <50 | <50 | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | <50 | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | <10 | <10 | <10 | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 96.8 | ---- | 91.8 | 108 | 108 | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 70.2 | ---- | 72.8 | 65.2 | 65.2 | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 66.4 | ---- | 81.4 | 67.2 | 67.2 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 76.0 | ---- | 84.4 | 76.9 | 76.9 | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 95.7 | ---- | 98.5 | 100 | 100 | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 76.3 | ---- | 78.8 | 79.4 | 79.4 | ---- |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT000_BH05_16011
9_1.0 | CPT000_BH05_16011
9_1.5 | CPT011W_BH03_1601
19_0.2 | CPT011W_BH03_1601
19_0.5 | CPT011W_BH03_1601
19_1.5 |
|---|------------|-------|------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 16-Jan-2019 10:10 | 16-Jan-2019 10:15 | 16-Jan-2019 12:15 | 16-Jan-2019 12:20 | 16-Jan-2019 12:30 |
| Compound | CAS Number | LOR | Unit | EM1900529-009 | EM1900529-010 | EM1900529-013 | EM1900529-014 | EM1900529-016 |
| | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 94.9 | ---- | 95.5 | 95.7 | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 91.9 | ---- | 91.6 | 95.0 | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 81.1 | ---- | 83.9 | 85.0 | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 99.5 | ---- | 99.3 | 101 | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 96.6 | ---- | 97.6 | 98.1 | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 93.5 | ---- | 93.4 | 93.1 | ---- |



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|---|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT061_BH22_16011
9_0.2 | CPT061_BH22_16011
9_0.5 | CPT061_BH22_16011
9_1.0 | CPT061_BH22_16011
9_1.5 | ---- |
| Client sampling date / time | | | | | 16-Jan-2019 14:20 | 16-Jan-2019 14:25 | 16-Jan-2019 14:30 | 16-Jan-2019 14:35 | ---- |
| Compound | CAS Number | LOR | Unit | EM1900529-019 | EM1900529-020 | EM1900529-021 | EM1900529-022 | ----- | |
| | | | | Result | Result | Result | Result | ---- | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | 4.7 | ---- | ---- | 5.6 | ---- | |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | ---- | 4.3 | 4.5 | ---- | ---- | |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | ---- | 54 | 30 | ---- | ---- | |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | ---- | 0.09 | 0.05 | ---- | ---- | |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | ---- | 0.009 | 0.009 | ---- | ---- | |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | ---- | <10 | <10 | ---- | ---- | |
| EA033-D: Retained Acidity | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | ---- | <0.02 | ---- | ---- | ---- | |
| HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | ---- | <0.02 | ---- | ---- | ---- | |
| Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | ---- | <0.02 | ---- | ---- | ---- | |
| acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | ---- | <10 | ---- | ---- | ---- | |
| sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | ---- | <0.02 | ---- | ---- | ---- | |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | ---- | 1.5 | 1.5 | ---- | ---- | |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | ---- | 0.10 | 0.06 | ---- | ---- | |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | 63 | 36 | ---- | ---- | |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | 5 | 3 | ---- | ---- | |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | 0.10 | 0.06 | ---- | ---- | |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | 63 | 36 | ---- | ---- | |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | 5 | 3 | ---- | ---- | |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 3.7 | ---- | ---- | 22.4 | ---- | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | ---- | ---- | 25 | ---- | |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | ---- | ---- | <1 | ---- | |
| Copper | 7440-50-8 | 5 | mg/kg | <5 | ---- | ---- | <5 | ---- | |
| Lead | 7439-92-1 | 5 | mg/kg | <5 | ---- | ---- | 13 | ---- | |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | ---- | ---- | 5 | ---- | |
| Nickel | 7440-02-0 | 2 | mg/kg | <2 | ---- | ---- | 12 | ---- | |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | ---- | ---- | <5 | ---- | |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | ---- | ---- | <2 | ---- | |



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|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT061_BH22_16011
9_0.2 | CPT061_BH22_16011
9_0.5 | CPT061_BH22_16011
9_1.0 | CPT061_BH22_16011
9_1.5 | ---- |
| Client sampling date / time | | | | | 16-Jan-2019 14:20 | 16-Jan-2019 14:25 | 16-Jan-2019 14:30 | 16-Jan-2019 14:35 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900529-019 | EM1900529-020 | EM1900529-021 | EM1900529-022 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EG005T: Total Metals by ICP-AES - Continued | | | | | | | | | |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | ---- | ---- | <5 | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | | <5 | ---- | ---- | <5 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | <0.1 | ---- | ---- | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | <1 | ---- | ---- | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 100 | ---- | ---- | 210 | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | ---- | ---- | <0.1 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | ---- | ---- | <0.2 | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | ---- | ---- | <0.2 | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | ---- | <1 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | ---- | <0.02 | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | ---- | <0.01 | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | ---- | <0.4 | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | ---- | <0.02 | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | ---- | <0.01 | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | ---- | <0.02 | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | ---- | <0.01 | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | ---- | <0.01 | ---- |



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|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT061_BH22_16011
9_0.2 | CPT061_BH22_16011
9_0.5 | CPT061_BH22_16011
9_1.0 | CPT061_BH22_16011
9_1.5 | ---- |
| Client sampling date / time | | | | | 16-Jan-2019 14:20 | 16-Jan-2019 14:25 | 16-Jan-2019 14:30 | 16-Jan-2019 14:35 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900529-019 | EM1900529-020 | EM1900529-021 | EM1900529-022 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | ---- | ---- | ---- | <0.04 | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | <0.01 | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | <0.01 | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | <0.01 | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | <0.05 | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | <0.05 | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | <0.05 | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | ---- | ---- | ---- | <0.2 | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | ---- | ---- | ---- | <5 | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | ---- | ---- | ---- | <5 | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | ---- | ---- | ---- | <5 | ---- |



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|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT061_BH22_16011
9_0.2 | CPT061_BH22_16011
9_0.5 | CPT061_BH22_16011
9_1.0 | CPT061_BH22_16011
9_1.5 | ---- |
| Client sampling date / time | | | | | 16-Jan-2019 14:20 | 16-Jan-2019 14:25 | 16-Jan-2019 14:30 | 16-Jan-2019 14:35 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900529-019 | EM1900529-020 | EM1900529-021 | EM1900529-022 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) - Continued | | | | | | | | | |
| Dinoseb | 88-85-7 | 5 | mg/kg | <5 | ---- | ---- | ---- | <5 | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | ---- | ---- | ---- | <5 | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | 0.6 | ---- | ---- | ---- | 0.6 | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | 1.2 | ---- | ---- | ---- | 1.2 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | ---- |

| | Client sampling date / time | | | 16-Jan-2019 14:20 | 16-Jan-2019 14:25 | 16-Jan-2019 14:30 | 16-Jan-2019 14:35 | ---- |
|---|-----------------------------|------|-------|-------------------|-------------------|-------------------|-------------------|-------|
| Compound | CAS Number | LOR | Unit | EM1900529-019 | EM1900529-020 | EM1900529-021 | EM1900529-022 | ----- |
| | | | | Result | Result | Result | Result | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | ---- |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | ---- | ---- | <0.05 | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | ---- |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | ---- | ---- | <0.05 | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | ---- |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | ---- | ---- | <0.05 | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | <0.05 | ---- | ---- | <0.05 | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | ---- | <10 | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | ---- | <50 | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | ---- | <10 | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | <100 | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | <100 | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | ---- | <50 | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | ---- | <50 | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | 110 | ---- | ---- | <100 | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | <100 | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | 110 | ---- | ---- | <50 | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | ---- | ---- | <50 | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | ---- | <10 | ---- |
| EP066S: PCB Surrogate | | | | | | | | |



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|--|------------|-------|------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT061_BH22_16011
9_0.2 | CPT061_BH22_16011
9_0.5 | CPT061_BH22_16011
9_1.0 | CPT061_BH22_16011
9_1.5 | ---- |
| Client sampling date / time | | | | | 16-Jan-2019 14:20 | 16-Jan-2019 14:25 | 16-Jan-2019 14:30 | 16-Jan-2019 14:35 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900529-019 | EM1900529-020 | EM1900529-021 | EM1900529-022 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP066S: PCB Surrogate - Continued | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 107 | ---- | ---- | 110 | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 74.1 | ---- | ---- | 64.2 | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 68.3 | ---- | ---- | 73.0 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 82.6 | ---- | ---- | 82.3 | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 94.6 | ---- | ---- | 103 | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 77.8 | ---- | ---- | 81.4 | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | 94.9 | ---- | ---- | 100 | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | 93.6 | ---- | ---- | 98.3 | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | 87.1 | ---- | ---- | 87.9 | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | 100 | ---- | ---- | 107 | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | 95.2 | ---- | ---- | 102 | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | 90.0 | ---- | ---- | 97.8 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC313_160119 | CPT_QC413_160119 | CPT_QC522 | CPT_QC523 | CPT_QC527 |
|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900529-025 | EM1900529-026 | EM1900529-027 | EM1900529-028 | EM1900529-029 |
| | | | | | Result | Result | Result | Result | Result |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 5.39 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | <0.005 | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | <0.004 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC313_160119 | CPT_QC413_160119 | CPT_QC522 | CPT_QC523 | CPT_QC527 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900529-025 | EM1900529-026 | EM1900529-027 | EM1900529-028 | EM1900529-029 |
| | | | | | Result | Result | Result | Result | Result |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC313_160119 | CPT_QC413_160119 | CPT_QC522 | CPT_QC523 | CPT_QC527 |
|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900529-025 | EM1900529-026 | EM1900529-027 | EM1900529-028 | EM1900529-029 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC313_160119 | CPT_QC413_160119 | CPT_QC522 | CPT_QC523 | CPT_QC527 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900529-025 | EM1900529-026 | EM1900529-027 | EM1900529-028 | EM1900529-029 |
| | | | | | Result | Result | Result | Result | Result |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 107 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 89.5 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 90.3 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 95.8 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 19.4 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 45.4 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 67.7 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 60.6 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 74.9 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 94.2 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC313_160119 | CPT_QC413_160119 | CPT_QC522 | CPT_QC523 | CPT_QC527 |
|---|------------|------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900529-025 | EM1900529-026 | EM1900529-027 | EM1900529-028 | EM1900529-029 |
| | | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.25 | % | | 37.1 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.25 | % | | 88.6 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.25 | % | | 97.4 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.25 | % | | 98.0 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.25 | % | | 99.3 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.25 | % | | 112 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.25 | % | | 111 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.25 | % | | 104 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 93.3 | 98.8 | 96.9 | 87.1 | 97.8 |
| Toluene-D8 | 2037-26-5 | 2 | % | | 92.8 | 96.8 | 95.4 | 86.3 | 96.2 |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 105 | 94.2 | 91.6 | 88.3 | 96.3 |



□□ □ □□□□□ □□ □□

| | | | |
|---|-------------------|-----------------|------|
| Sub-Matrix: SOIL | | □□□□ □ □□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

| | | | |
|---|-------------------|-----------------|------|
| Sub-Matrix: WATER | | □□□□ □ □□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 13 | 90 |
| 2-Chlorophenol-D4 | 93951-73-6 | 42 | 117 |
| 2,4,6-Tribromophenol | 118-79-6 | 52 | 140 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 49 | 136 |

| Sub-Matrix: WATER | | ☐☐☐☐ ☐ ☐☐☐ ☐☐ s ☐ | |
|--|------------|-------------------|-----|
| Compound | CAS Number | ☐☐% | ☐☐☐ |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 49 | 128 |
| 2-Fluorobiphenyl | 321-60-8 | 57 | 137 |
| Anthracene-d10 | 1719-06-8 | 67 | 137 |
| 4-Terphenyl-d14 | 1718-51-0 | 66 | 136 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900529 | Page | : 1 of 14 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 16-Jan-2019 17:40 |
| Order number | : ---- | Date Analysed | : 18-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 25-Jan-2019 17:23 |
| No. of samples received | : 29 | | |
| No. of samples analysed | : 19 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| Client Sample ID | ALS Sample ID | Compound | Method | LOR | Limits | Result |
|----------------------------|---------------|----------|--------|-----|------------|----------|
| CPT061_BH22_1601
19_1.5 | EM1900529-022 | Arsenic | EG005T | 5 | < 20 mg/kg | 25 mg/kg |



Analytical Results

Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| Compound | Method | LOR | Unit | Client sample ID | | CPT000_BH07
_160119_0.2 | CPT000_BH07
_160119_1.0 | CPT000_BH05
_160119_0.2 | CPT000_BH05
_160119_1.0 | CPT011W_BH
03_160119_0.
2 |
|---|--------------|------|---------|--------------------|---------|----------------------------|----------------------------|----------------------------|----------------------------|---------------------------------|
| | | | | Sampling date/time | | | | | | |
| | | | | □□□□ □□ | □□□□ □□ | 16-Jan-2019
08:10 | 16-Jan-2019
08:20 | 16-Jan-2019
10:00 | 16-Jan-2019
10:10 | 16-Jan-2019
12:15 |
| | | | | □□ □□ | □□□□ | EM1900529-001 | EM1900529-003 | EM1900529-007 | EM1900529-009 | EM1900529-013 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 4.6 | 5.7 | 4.4 | 4.3 | 4.6 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | <5 | <5 | <5 | 6 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 | <5 | <5 | <5 | <5 |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 9 | 6 | 26 | 10 | 12 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 3 | 4 | 3 | 8 | 7 |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | <2 |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 | <5 | 9 | <5 | 18 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | 0.2 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | 0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | <1 | <1 | <1 | 1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 130 | 210 | 70 | 210 | 120 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | <1 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| | | | | Client sample ID | | CPT000_BH07
_160119_0.2 | CPT000_BH07
_160119_1.0 | CPT000_BH05
_160119_0.2 | CPT000_BH05
_160119_1.0 | CPT011W_BH
03_160119_0.
2 |
|--|--------------|------|-------|--------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|---------------------------------|
| Sampling date/time | | | | □ □ □ □ □ □ | □ □ □ □ □ □ | 16-Jan-2019
08:10 | 16-Jan-2019
08:20 | 16-Jan-2019
10:00 | 16-Jan-2019
10:10 | 16-Jan-2019
12:15 |
| Compound | Method | LOR | Unit | □ □ □ □
□ □ □ □ | □ □ □ □ □ □
□ □ □ □ □ □ | EM1900529-001 | EM1900529-003 | EM1900529-007 | EM1900529-009 | EM1900529-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | <50 | <50 | <50 | <50 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | CPT000_BH07
_160119_0.2 | CPT000_BH07
_160119_1.0 | CPT000_BH05
_160119_0.2 | CPT000_BH05
_160119_1.0 | CPT011W_BH
03_160119_0.2 |
|---|--------------|------|---------|--------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Sampling date/time | | | | □ □ □ □ □ □ | □ □ □ □ □ □ | 16-Jan-2019
08:10 | 16-Jan-2019
08:20 | 16-Jan-2019
10:00 | 16-Jan-2019
10:10 | 16-Jan-2019
12:15 |
| Compound | Method | LOR | Unit | □ □ □ □
□ □ □ □ | □ □ □ □ □ □
□ □ □ □ □ □ | EM1900529-001 | EM1900529-003 | EM1900529-007 | EM1900529-009 | EM1900529-013 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.6 | 5.7 | 4.4 | 4.3 | 4.6 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | 6 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | <5 | <5 | <5 | <5 | <5 |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 9 | 6 | 26 | 10 | 12 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 3 | 4 | 3 | 8 | 7 |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | <5 | <5 | 9 | <5 | 18 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | 0.2 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | 0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | <1 | <1 | <1 | 1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 130 | 210 | 70 | 210 | 120 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | <1 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | CPT000_BH07_160119_0.2 | CPT000_BH07_160119_1.0 | CPT000_BH05_160119_0.2 | CPT000_BH05_160119_1.0 | CPT011W_BH03_160119_0.2 |
|--|--------------|------|-------|----------------------------|----------------------------|------------------------|------------------------|------------------------|------------------------|-------------------------|
| Sampling date/time | | | | □ □ □ □ □ □ | □ □ □ □ □ □ | 16-Jan-2019 08:10 | 16-Jan-2019 08:20 | 16-Jan-2019 10:00 | 16-Jan-2019 10:10 | 16-Jan-2019 12:15 |
| Compound | Method | LOR | Unit | □ □ □ □ □ □
□ □ □ □ □ □ | □ □ □ □ □ □
□ □ □ □ □ □ | EM1900529-001 | EM1900529-003 | EM1900529-007 | EM1900529-009 | EM1900529-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | <50 | <50 | <50 | <50 | <50 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT000_BH07
_160119_0.2 | CPT000_BH07
_160119_1.0 | CPT000_BH05
_160119_0.2 | CPT000_BH05
_160119_1.0 | CPT011W_BH
03_160119_0.2 |
|---|--------------|------|---------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Sampling date/time | | | | □ □ □ □ □ □ | □ □ □ □ □ □ | 16-Jan-2019
08:10 | 16-Jan-2019
08:20 | 16-Jan-2019
10:00 | 16-Jan-2019
10:10 | 16-Jan-2019
12:15 |
| Compound | Method | LOR | Unit | □ □ □ □ □ □
□ □ □ □ □ □ | □ □ □ □ □ □
□ □ □ □ □ □ | EM1900529-001 | EM1900529-003 | EM1900529-007 | EM1900529-009 | EM1900529-013 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.6 | 5.7 | 4.4 | 4.3 | 4.6 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | <5 | <5 | <5 | 6 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | <5 | <5 | <5 | <5 | <5 |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 9 | 6 | 26 | 10 | 12 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 3 | 4 | 3 | 8 | 7 |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | 9 | <5 | 18 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | 0.2 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | 0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | <1 | <1 | <1 | 1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 130 | 210 | 70 | 210 | 120 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | <1 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

| | | | | Client sample ID | | CPT000_BH07
_160119_0.2 | CPT000_BH07
_160119_1.0 | CPT000_BH05
_160119_0.2 | CPT000_BH05
_160119_1.0 | CPT011W_BH
03_160119_0.
2 |
|--|--------------|------|-------|--------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|---------------------------------|
| Sampling date/time | | | | □ □ □ □ □ □ | □ □ □ □ □ □ | 16-Jan-2019
08:10 | 16-Jan-2019
08:20 | 16-Jan-2019
10:00 | 16-Jan-2019
10:10 | 16-Jan-2019
12:15 |
| Compound | Method | LOR | Unit | □ □ □ □
□ □ □ □ | □ □ □ □ □ □
□ □ □ □ □ □ | EM1900529-001 | EM1900529-003 | EM1900529-007 | EM1900529-009 | EM1900529-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | <50 | <50 | <50 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT011W_BH
03_160119_0.
5 | CPT061_BH22
_160119_0.2 | CPT061_BH22
_160119_1.5 | ---- | ---- | | |
|--|--------------|------|---------|--------------------|--------|---------------------------------|----------------------------|----------------------------|------|------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | □□ □□ | □□□□ | | | | | | □□□ □ | □□ □ |
| Compound | Method | LOR | Unit | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.6 | 4.7 | 5.6 | ---- | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 8 | <5 | 25 | ---- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | ---- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 | <5 | <5 | ---- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 11 | <5 | 13 | ---- | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | 5 | ---- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 17 | <2 | 12 | ---- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | ---- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | ---- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 | <5 | <5 | ---- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | ---- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | ---- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | <1 | <1 | ---- | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 220 | 100 | 210 | ---- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | ---- | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | ---- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | ---- | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | ---- | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | ---- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | ---- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | ---- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT011W_BH
03_160119_0.
5 | CPT061_BH22
_160119_0.2 | CPT061_BH22
_160119_1.5 | ---- | ---- |
|--|--------------|------|-------|--------------------|------------------|---------------------------------|----------------------------|----------------------------|-------|-------|
| | | | | Sampling date/time | | 16-Jan-2019
12:20 | 16-Jan-2019
14:20 | 16-Jan-2019
14:35 | ---- | ---- |
| Compound | Method | LOR | Unit | □□□□ □□
□□□ □ | □□□□ □□
□□□ □ | EM1900529-014 | EM1900529-019 | EM1900529-022 | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | <0.5 | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | <50 | <50 | ---- | ---- |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | CPT011W_BH
03_160119_0.
5 | CPT061_BH22
_160119_0.2 | CPT061_BH22
_160119_1.5 | ---- | ---- |
|---|--------------|------|---------|--------------------|---------|---------------------------------|----------------------------|----------------------------|-------|-------|
| | | | | Sampling date/time | | 16-Jan-2019
12:20 | 16-Jan-2019
14:20 | 16-Jan-2019
14:35 | ---- | ---- |
| Compound | Method | LOR | Unit | □□□□ □□ | □□□□ □□ | EM1900529-014 | EM1900529-019 | EM1900529-022 | ----- | ----- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.6 | 4.7 | 5.6 | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | 8 | <5 | 25 | ---- | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | ---- | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | <5 | <5 | <5 | ---- | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 11 | <5 | 13 | ---- | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | 5 | ---- | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 17 | <2 | 12 | ---- | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | ---- | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | ---- | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | ---- | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | <5 | <5 | <5 | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | <1 | <1 | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 220 | 100 | 210 | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | ---- | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | ---- | ---- |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | ---- | ---- |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | ---- | ---- |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | CPT011W_BH
03_160119_0.
5 | CPT061_BH22
_160119_0.2 | CPT061_BH22
_160119_1.5 | ---- | ---- |
|--|--------------|------|-------|--------------------|-------------------|---------------------------------|----------------------------|----------------------------|-------|-------|
| | | | | Sampling date/time | | 16-Jan-2019
12:20 | 16-Jan-2019
14:20 | 16-Jan-2019
14:35 | ---- | ---- |
| Compound | Method | LOR | Unit | □□□□ □□
□□□ □□ | □□□□ □□
□□□ □□ | EM1900529-014 | EM1900529-019 | EM1900529-022 | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 | <0.5 | <0.5 | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | <10 | <10 | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | <50 | <50 | <50 | ---- | ---- |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | Client sample ID | | CPT011W_BH
03_160119_0.
5 | CPT061_BH22
_160119_0.2 | CPT061_BH22
_160119_1.5 | ---- | ---- |
|---|--------------|------|---------|--------------------|---------|---------------------------------|----------------------------|----------------------------|-------|-------|
| | | | | Sampling date/time | | 16-Jan-2019
12:20 | 16-Jan-2019
14:20 | 16-Jan-2019
14:35 | ---- | ---- |
| Compound | Method | LOR | Unit | □□□□ □□ | □□□□ □□ | EM1900529-014 | EM1900529-019 | EM1900529-022 | ----- | ----- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.6 | 4.7 | 5.6 | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | 8 | <5 | 25 | ---- | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | ---- | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | <5 | <5 | <5 | ---- | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 11 | <5 | 13 | ---- | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | 5 | ---- | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 17 | <2 | 12 | ---- | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | ---- | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | ---- | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | ---- | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | <1 | <1 | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 220 | 100 | 210 | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | ---- | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | ---- | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

[illegible]



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900529 | Page | : 1 of 23 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 16-Jan-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 18-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 25-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : GIJPP | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 29 | | |
| No. of samples analysed | : 19 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□□□ □□ □□

[REDACTED]
[REDACTED]
[REDACTED]

□□□□□□

Senior Acid Sulfate Soil Chemist
Senior Inorganic Chemist
Senior Organic Chemist

□□□ □□□ □□□ □□□ □

Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2146733) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 4.6 | 4.5 | 2.20 | 0% - 20% |
| EM1900697-007 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 4.5 | 4.5 | 0.00 | 0% - 20% |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2147767) | | | | | | | | | |
| EM1900529-007 | CPT000_BH05_160119_0.2 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 4.4 | 4.3 | 2.30 | 0% - 20% |
| EM1900531-013 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.1 | 5.0 | 1.98 | 0% - 20% |
| EA029-A: pH Measurements (QC Lot: 2151276) | | | | | | | | | |
| EM1900529-002 | CPT000_BH07_160119_0.5 | EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | 4.7 | 4.7 | 0.00 | 0% - 20% |
| | | EA029: pH OX (23B) | ---- | 0.1 | pH Unit | 4.9 | 4.8 | 2.06 | 0% - 20% |
| EA029-B: Acidity Trail (QC Lot: 2151276) | | | | | | | | | |
| EM1900529-002 | CPT000_BH07_160119_0.5 | EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.044 | 0.043 | 3.14 | No Limit |
| | | EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | 0.069 | 0.073 | 4.51 | No Limit |
| | | EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | 0.025 | 0.030 | 16.5 | No Limit |
| | | EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 27 | 27 | 0.00 | 0% - 50% |
| | | EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | 43 | 45 | 4.51 | 0% - 20% |
| | | EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | 16 | 19 | 16.5 | No Limit |
| EA029-C: Sulfur Trail (QC Lot: 2151276) | | | | | | | | | |
| EM1900529-002 | CPT000_BH07_160119_0.5 | EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | 0.021 | 0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | 0.021 | 0.020 | 0.00 | No Limit |
| | | EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | 13 | 12 | 0.00 | No Limit |
| EA029-D: Calcium Values (QC Lot: 2151276) | | | | | | | | | |

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA029-D: Calcium Values (QC Lot: 2151276) - continued | | | | | | | | | |
| EM1900529-002 | CPT000_BH07_160119_0.5 | EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | 0.040 | 0.042 | 5.56 | No Limit |
| | | EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | 0.058 | 0.068 | 16.4 | No Limit |
| | | EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | 0.026 | 25.7 | No Limit |
| | | EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | 0.021 | 0.00 | No Limit |
| | | EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | 13 | 25.5 | No Limit |
| EA029-E: Magnesium Values (QC Lot: 2151276) | | | | | | | | | |
| EM1900529-002 | CPT000_BH07_160119_0.5 | EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | 0.089 | 0.094 | 5.44 | No Limit |
| | | EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | 0.095 | 0.097 | 2.38 | No Limit |
| | | EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-H: Acid Base Accounting (QC Lot: 2151276) | | | | | | | | | |
| EM1900529-002 | CPT000_BH07_160119_0.5 | EA029: ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 0.00 | No Limit |
| | | EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.06 | 0.06 | 0.00 | No Limit |
| | | EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.06 | 0.06 | 0.00 | No Limit |
| | | EA029: Liming Rate | ---- | 1 | kg CaCO3/t | 3 | 3 | 0.00 | No Limit |
| | | EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 3 | 3 | 0.00 | No Limit |
| | | EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 40 | 39 | 3.23 | No Limit |
| | | EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 40 | 39 | 3.23 | No Limit |
| EA033-A: Actual Acidity (QC Lot: 2151277) | | | | | | | | | |
| EM1900529-008 | CPT000_BH05_160119_0.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.06 | 0.06 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 40 | 39 | 4.32 | 0% - 20% |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 4.5 | 4.5 | 0.00 | 0% - 20% |
| EM1900531-014 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.03 | 0.03 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 19 | 18 | 10.0 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 5.3 | 5.4 | 1.87 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2151277) | | | | | | | | | |
| EM1900529-008 | CPT000_BH05_160119_0.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.007 | 0.008 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EM1900531-014 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | <0.005 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2143534) | | | | | | | | | |
| EM1900472-022 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 4.5 | 4.3 | 3.20 | No Limit |
| EM1900531-001 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 7.5 | 6.6 | 12.6 | No Limit |
| EG005T: Total Metals by ICP-AES (QC Lot: 2143339) | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005T: Total Metals by ICP-AES (QC Lot: 2143339) - continued | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 3 | 4 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 9 | 11 | 15.9 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| EM1900535-002 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 14 | 15 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 7 | 7 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 11 | 12 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 10 | 10 | 0.00 | No Limit | | |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2143338) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900535-002 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2147780) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900531-002 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2148151) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900531-002 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2143628) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 130 | 130 | 0.00 | No Limit |
| EM1900531-002 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 120 | 130 | 9.68 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2145461) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900531-007 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2143429) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|-------------------------------------|----------------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2143429) - continued | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900531-007 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | 1.9 | 2.2 | 16.2 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | 0.8 | 0.9 | 17.6 | No Limit |
| | | | | | | | | | |
| EP074H: Naphthalene (QC Lot: 2143429) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900531-007 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2143429) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| | | EM1900531-007 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2143429) - continued | | | | | | | | | |
| EM1900531-007 | Anonymous | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit | | |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2145459) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1900531-007 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2145459) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2145459) - continued | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900531-007 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2145459) | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900531-007 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pvrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2145459) - continued | | | | | | | | | |
| EM1900531-007 | Anonymous | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2145459) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900531-007 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2145459) - continued | | | | | | | | | |
| EM1900531-007 | Anonymous | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2143429) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900531-007 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2145460) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900531-007 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2143429) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900531-007 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2145460) | | | | | | | | | |
| EM1900529-001 | CPT000_BH07_160119_0.2 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900531-007 | Anonymous | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2142716) | | | | | | | | | |
| EM1900521-010 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.86 | 7.87 | 0.127 | 0% - 20% |
| EM1900281-001 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 5.73 | 5.73 | 0.00 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2143472) | | | | | | | | | |
| EM1900572-003 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.004 | 0.004 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2143472) - continued | | | | | | | | | |
| EM1900572-003 | Anonymous | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.001 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 0.022 | 0.022 | 0.00 | 0% - 20% |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.092 | 0.089 | 3.04 | 0% - 20% |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.052 | 0.048 | 7.95 | 0% - 50% |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900072-001 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.005 | 0.005 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.011 | 0.012 | 0.00 | 0% - 50% |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2143475) | | | | | | | | | |
| EM1900529-025 | CPT_QC313_160119 | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2143474) | | | | | | | | | |
| EM1900610-005 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900072-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2144130) | | | | | | | | | |
| EM1900366-001 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2143276) | | | | | | | | | |
| EM1900521-010 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EM1900212-015 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | 0.025 | 0.025 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2142722) | | | | | | | | | |
| EM1900526-005 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.4 | 0.4 | 0.00 | No Limit |
| EM1900532-010 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.1 | 0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|----------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2145257) - continued | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2142595) | | | | | | | | | |
| EM1900500-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900516-010 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2145256) | | | | | | | | | |
| EM1900632-037 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900594-029 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2142595) | | | | | | | | | |
| EM1900500-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900516-010 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2145256) | | | | | | | | | |
| EM1900632-037 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900594-029 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2142595) | | | | | | | | | |
| EM1900500-001 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900516-010 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------|----------------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080: BTEXN (QC Lot: 2142595) - continued | | | | | | | | | |
| EM1900516-010 | Anonymous | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2145256) | | | | | | | | | |
| EM1900632-037 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900594-029 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA029-A: pH Measurements (QCLot: 2151276) | | | | | | | | |
| EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA029: pH OX (23B) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA029-B: Acidity Trail (QCLot: 2151276) | | | | | | | | |
| EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 90.4 | 70 | 130 |
| EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | <2 | 29.1 mole H+ / t | 98.4 | 70 | 130 |
| EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | <2 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-C: Sulfur Trail (QCLot: 2151276) | | | | | | | | |
| EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | 0.052 % S | 77.1 | 70 | 130 |
| EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | <0.020 | 0.145 % S | 104 | 70 | 130 |
| EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029-D: Calcium Values (QCLot: 2151276) | | | | | | | | |
| EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | <0.020 | 0.151 % Ca | 103 | 70 | 130 |
| EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | <0.020 | 0.296 % Ca | 102 | 70 | 130 |
| EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-E: Magnesium Values (QCLot: 2151276) | | | | | | | | |
| EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | <0.020 | 0.176 % Mg | 97.6 | 70 | 130 |
| EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | <0.020 | 0.175 % Mg | 114 | 70 | 130 |
| EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | ---- | ---- | ---- | ---- |
| EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting (QCLot: 2151276) | | | | | | | | |
| EA029: ANC Fineness Factor | ---- | 0.5 | - | <0.5 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |



| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-------|-------------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| Method: Compound | CAS Number | LOR | Unit | | Spike | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | Concentration | LCS | Low | High |
| EA033-A: Actual Acidity (QCLot: 2151277) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 100 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 89.8 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2151277) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 95.9 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-D: Retained Acidity (QCLot: 2151277) | | | | | | | | |
| EA033: Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA033: acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033: sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.02 | 0.052 % S | 77.1 | 70 | 130 |
| EA033: HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | <0.02 | 0.027 % S | 87.9 | 70 | 130 |
| EG005T: Total Metals by ICP-AES (QCLot: 2143339) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 92.9 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 86.8 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 95.3 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 87.8 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 86.5 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 93.7 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 98.0 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 93.5 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 106 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 90.4 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2143338) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 84.6 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2147780) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 79.7 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148151) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 92.5 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2143628) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 103 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2145461) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 113 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2143429) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 73.3 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 80.1 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 74.8 | 66 | 119 |

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2143429) - continued | | | | | | | | |
| EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 74.9 | 66 | 115 |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 78.5 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 75.5 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2143429) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 93.5 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2143429) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 59.7 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 70.1 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 81.9 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 75.7 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 78.8 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.1 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 69.6 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 68.4 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 81.6 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 72.2 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 92.7 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 75.3 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 72.6 | 71 | 118 |
| EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 84.0 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.4 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 78.9 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 70.2 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 78.2 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 79.4 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2145459) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 97.5 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 111 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 110 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 115 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 103 | 65 | 124 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 106 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 108 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2145459) | | | | | | | | |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2145459) - continued | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 102 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 107 | 65 | 126 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 104 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 108 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 100 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 97.8 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 109 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 97.7 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 106 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 69.1 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2145459) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 109 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 104 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 114 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 112 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 57.0 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 113 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 127 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 120 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 87.2 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 130 | 72 | 134 |
| EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 134 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 132 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2145459) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 92.3 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 109 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 111 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 93.4 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 102 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 103 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 98.9 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 101 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 100 | 64 | 137 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2145459) - continued | | | | | | | | |
| EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 107 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 103 | 72 | 132 |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 88.2 | 42 | 160 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | # 43.4 | 55 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 113 | 73 | 132 |
| EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 122 | 75 | 134 |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 73 | 133 |
| EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 127 | 67 | 133 |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 89.9 | 67 | 135 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2143429) | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 83.6 | 63 | 122 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145460) | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 111 | 70 | 120 |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 112 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 110 | 77 | 117 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2143429) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 81.7 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTE | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- |
| | X | | | | | | | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145460) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 109 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 112 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 112 | 68 | 124 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|--------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
LowHigh | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2143472) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.5 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 100 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 83 | 105 |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 103 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 97.6 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 100 | 83 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 102 | 85 | 109 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2143475) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 103 | 84 | 116 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2143474) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 93.9 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2144130) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 106 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2143276) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 94.9 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2142722) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 100 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2147080) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 119 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2145257) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 102 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2145257) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 104 | 53 | 135 |
| EP074: 1.1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 92.6 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 104 | 83 | 122 |
| EP074: trans-1.2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 77.3 | 68 | 119 |
| EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 82.4 | 77 | 118 |
| EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 76.4 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 70.7 | 62 | 117 |
| EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 85.4 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 93.9 | 67 | 120 |
| EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 98.8 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 98.7 | 67 | 120 |
| EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 87.6 | 76 | 112 |
| EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 103 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 112 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2145257) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 101 | 81 | 116 |
| EP074: 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 101 | 75 | 118 |
| EP074: 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 97.9 | 81 | 113 |
| EP074: 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 109 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2145257) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 83.2 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147079) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 104 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 106 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 102 | 53 | 117 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB) Report | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|------|--------|--------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147079) - continued | | | | | | | | |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 102 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 102 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 101 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 101 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 101 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 100.0 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 103 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | 5 µg/L | 115 | 56 | 131 |
| | 205-82-3 | | | | | | | |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 118 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 117 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 109 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 111 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 111 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2146988) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 93.8 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 107 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 120 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 109 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 124 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 124 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 20 µg/L | 116 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5 | 2 | µg/L | <2 | 30 µg/L | 117 | 53 | 125 |
| | 8-90-2 | | | | | | | |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 121 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2146988) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 4 | µg/L | <4 | 10 µg/L | 44.7 | 18 | 51 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | 10 µg/L | 90.2 | 49 | 106 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | 20 µg/L | 83.0 | 41 | 91 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | 10 µg/L | 112 | 48 | 120 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | 10 µg/L | 104 | 47 | 128 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | 60 µg/L | 102 | 41 | 130 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | 60 µg/L | 42.7 | 19 | 49 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | 60 µg/L | 93.2 | 47 | 126 |
| EP075-EM: Dinoseb | 88-85-7 | 50 | µg/L | <50 | 60 µg/L | 118 | 49 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | 50 µg/L | 125 | 61 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2146988) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 10 µg/L | 115 | 57 | 126 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2146988) - continued | | | | | | | | |
| EP075-EM: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 123 | 62 | 134 |
| EP075-EM: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 108 | 58 | 133 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 116 | 60 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 114 | 59 | 132 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 124 | 61 | 137 |
| EP075-EM: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 10 µg/L | 114 | 59 | 130 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 135 | 59 | 135 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | 10 µg/L | # 140 | 59 | 128 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2142595) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 93.9 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145256) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 106 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147076) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 81.8 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 89.6 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 89.8 | 55 | 130 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2142595) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 90.2 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145256) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 109 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2147076) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 90.2 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 89.6 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 88.6 | 53 | 136 |
| EP080: BTEXN (QCLot: 2142595) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 94.9 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 102 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 99.4 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | 40 µg/L | 100 | 72 | 129 |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 101 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 89.2 | 70 | 125 |
| EP080: BTEXN (QCLot: 2145256) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 108 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 108 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 110 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | 40 µg/L | 107 | 72 | 129 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-----|------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | | Concentration | LCS | Low | High |
| EP080: BTEXN (QCLot: 2145256) - continued | | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 106 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 103 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2143339) | | | | | | | |
| EM1900529-003 | CPT000_BH07_160119_1.0 | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 85.5 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 95.7 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 98.4 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 102 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 96.3 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 99.4 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 79.4 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 95.5 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2143338) | | | | | | | |
| EM1900529-003 | CPT000_BH07_160119_1.0 | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 91.1 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2147780) | | | | | | | |
| EM1900529-003 | CPT000_BH07_160119_1.0 | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | 94.6 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148151) | | | | | | | |
| EM1900529-003 | CPT000_BH07_160119_1.0 | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 101 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2143628) | | | | | | | |
| EM1900529-003 | CPT000_BH07_160119_1.0 | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 102 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2145461) | | | | | | | |
| EM1900529-009 | CPT000_BH05_160119_1.0 | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 112 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2143429) | | | | | | | |
| EM1900529-003 | CPT000_BH07_160119_1.0 | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 70.4 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 75.3 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2143429) | | | | | | | |
| EM1900529-003 | CPT000_BH07_160119_1.0 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 70.1 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 69.8 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 76.2 | 28 | 134 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------------|-----------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2145459) | | | | | | | |
| EM1900529-003 | CPT000_BH07_160119_1.0 | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 95.5 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 111 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 70.2 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2145459) | | | | | | | |
| EM1900529-003 | CPT000_BH07_160119_1.0 | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 102 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 94.8 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2145459) | | | | | | | |
| EM1900529-003 | CPT000_BH07_160119_1.0 | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 109 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 115 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2143429) | | | | | | | |
| EM1900529-003 | CPT000_BH07_160119_1.0 | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 63.3 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145460) | | | | | | | |
| EM1900529-007 | CPT000_BH05_160119_0.2 | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 98.1 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 99.9 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 98.3 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2143429) | | | | | | | |
| EM1900529-003 | CPT000_BH07_160119_1.0 | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 63.3 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145460) | | | | | | | |
| EM1900529-007 | CPT000_BH05_160119_0.2 | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 96.3 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 100.0 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 101 | 44 | 126 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|-----------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2143472) | | | | | | | |
| EM1900072-001 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 93.3 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 95.2 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 91.7 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 79.5 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 97.4 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 97.6 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2143474) | | | | | | | |
| EM1900072-003 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 74.8 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2144130) | | | | | | | |
| EM1900529-025 | CPT_QC313_160119 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 102 | 59 | 127 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2143276) | | | | | | | |
| EM1900521-001 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 89.0 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2142722) | | | | | | | |
| EM1900526-006 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 84.4 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2145257) | | | | | | | |
| EM1900529-025 | CPT_QC313_160119 | EP074: 1.1-Dichloroethene | 75-35-4 | 20 µg/L | 111 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 89.4 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2145257) | | | | | | | |
| EM1900529-025 | CPT_QC313_160119 | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 99.8 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2142595) | | | | | | | |
| EM1900516-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 85.7 | 43 | 125 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145256) | | | | | | | |
| EM1900529-025 | CPT_QC313_160119 | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 83.9 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2142595) | | | | | | | |
| EM1900516-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 81.5 | 44 | 122 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145256) | | | | | | | |
| EM1900529-025 | CPT_QC313_160119 | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 83.9 | 44 | 122 |
| EP080: BTEXN (QCLot: 2142595) | | | | | | | |
| EM1900516-001 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 97.9 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 102 | 72 | 132 |
| EP080: BTEXN (QCLot: 2145256) | | | | | | | |
| EM1900529-025 | CPT_QC313_160119 | EP080: Benzene | 71-43-2 | 20 µg/L | 103 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 105 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1900529**

Page : 1 of 15

Client : **AECOM Australia Pty Ltd**
Contact : **[REDACTED]**
Project : 60592634
Site : GIJPP
Sampler : **[REDACTED]**
Order number :

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 16-Jan-2019
Issue Date : 25-Jan-2019
No. of samples received : 29
No. of samples analysed : 19

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank** value outliers occur.
- **NO Duplicate** outliers occur.
- **NO Matrix Spike** outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|---------|------------|--------|---------|--|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2145459-001 | ---- | Endrin | 72-20-8 | 43.4 % | 55-148% | Recovery less than lower control limit |

Matrix: **WATER**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|----------|------------|-------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2146988-001 | ---- | 4,4'-DDT | 50-29-3 | 140 % | 59-128% | Recovery greater than upper control limit |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
CPT_QC313_160119 | ---- | ---- | ---- | 18-Jan-2019 | 16-Jan-2019 | 2 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 3 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 2 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 6 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 20 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 3 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 2 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 6 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 20 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | | Analysis | | |
|--|---|-------------|--------------------------|--------------------|------------|--|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001)
CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | | 22-Jan-2019 | 22-Jan-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EA001)
CPT000_BH05_160119_0.2,
CPT011W_BH03_160119_0.2,
CPT061_BH22_160119_0.2, | CPT000_BH05_160119_1.0,
CPT011W_BH03_160119_0.5,
CPT061_BH22_160119_1.5 | 16-Jan-2019 | 23-Jan-2019 | 23-Jan-2019 | ✓ | | 23-Jan-2019 | 23-Jan-2019 | ✓ |
| EA029-A: pH Measurements | | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT000_BH07_160119_0.5, | CPT000_BH07_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 11-Oct-2021 | ✓ | | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-B: Acidity Trail | | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT000_BH07_160119_0.5, | CPT000_BH07_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 11-Oct-2021 | ✓ | | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-C: Sulfur Trail | | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT000_BH07_160119_0.5, | CPT000_BH07_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 11-Oct-2021 | ✓ | | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-D: Calcium Values | | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT000_BH07_160119_0.5, | CPT000_BH07_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 11-Oct-2021 | ✓ | | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-E: Magnesium Values | | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT000_BH07_160119_0.5, | CPT000_BH07_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 11-Oct-2021 | ✓ | | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-F: Excess Acid Neutralising Capacity | | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT000_BH07_160119_0.5, | CPT000_BH07_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 11-Oct-2021 | ✓ | | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-G: Retained Acidity | | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT000_BH07_160119_0.5, | CPT000_BH07_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 11-Oct-2021 | ✓ | | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-H: Acid Base Accounting | | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT000_BH07_160119_0.5, | CPT000_BH07_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 11-Oct-2021 | ✓ | | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-A: Actual Acidity | | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_BH05_160119_0.5,
CPT011W_BH03_160119_0.5,
CPT061_BH22_160119_0.5, | CPT000_BH05_160119_1.5,
CPT011W_BH03_160119_1.5,
CPT061_BH22_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 16-Jan-2020 | ✓ | | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-B: Potential Acidity | | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_BH05_160119_0.5,
CPT011W_BH03_160119_0.5,
CPT061_BH22_160119_0.5, | CPT000_BH05_160119_1.5,
CPT011W_BH03_160119_1.5,
CPT061_BH22_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 16-Jan-2020 | ✓ | | 24-Jan-2019 | 24-Apr-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_BH05_160119_0.5,
CPT011W_BH03_160119_0.5,
CPT061_BH22_160119_0.5, | CPT000_BH05_160119_1.5,
CPT011W_BH03_160119_1.5,
CPT061_BH22_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 16-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_BH05_160119_0.5,
CPT011W_BH03_160119_0.5,
CPT061_BH22_160119_0.5, | CPT000_BH05_160119_1.5,
CPT011W_BH03_160119_1.5,
CPT061_BH22_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 16-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_BH05_160119_0.5,
CPT011W_BH03_160119_0.5,
CPT061_BH22_160119_0.5, | CPT000_BH05_160119_1.5,
CPT011W_BH03_160119_1.5,
CPT061_BH22_160119_1.0 | 16-Jan-2019 | 24-Jan-2019 | 16-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT000_BH07_160119_0.2,
CPT000_BH05_160119_0.2,
CPT011W_BH03_160119_0.2,
CPT061_BH22_160119_0.2, | CPT000_BH07_160119_1.0,
CPT000_BH05_160119_1.0,
CPT011W_BH03_160119_0.5,
CPT061_BH22_160119_1.5 | 16-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 30-Jan-2019 | ✓ |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT000_BH07_160119_0.2,
CPT000_BH05_160119_0.2,
CPT011W_BH03_160119_0.2,
CPT061_BH22_160119_0.2, | CPT000_BH07_160119_1.0,
CPT000_BH05_160119_1.0,
CPT011W_BH03_160119_0.5,
CPT061_BH22_160119_1.5 | 16-Jan-2019 | 21-Jan-2019 | 15-Jul-2019 | ✓ | 21-Jan-2019 | 15-Jul-2019 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
CPT000_BH07_160119_0.2,
CPT000_BH05_160119_0.2,
CPT011W_BH03_160119_0.2,
CPT061_BH22_160119_0.2, | CPT000_BH07_160119_1.0,
CPT000_BH05_160119_1.0,
CPT011W_BH03_160119_0.5,
CPT061_BH22_160119_1.5 | 16-Jan-2019 | 21-Jan-2019 | 13-Feb-2019 | ✓ | 23-Jan-2019 | 13-Feb-2019 | ✓ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
CPT000_BH07_160119_0.2,
CPT000_BH05_160119_0.2,
CPT011W_BH03_160119_0.2,
CPT061_BH22_160119_0.2, | CPT000_BH07_160119_1.0,
CPT000_BH05_160119_1.0,
CPT011W_BH03_160119_0.5,
CPT061_BH22_160119_1.5 | 16-Jan-2019 | 22-Jan-2019 | 13-Feb-2019 | ✓ | 23-Jan-2019 | 29-Jan-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF) | | 16-Jan-2019 | 22-Jan-2019 | 30-Jan-2019 | ✓ | 23-Jan-2019 | 05-Feb-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T) | | 16-Jan-2019 | 22-Jan-2019 | 13-Feb-2019 | ✓ | 23-Jan-2019 | 13-Feb-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM) | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 16-Jan-2019 | 18-Jan-2019 | 23-Jan-2019 | ✓ | 21-Jan-2019 | 23-Jan-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 16-Jan-2019 | 18-Jan-2019 | 23-Jan-2019 | ✓ | 21-Jan-2019 | 23-Jan-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 16-Jan-2019 | 18-Jan-2019 | 23-Jan-2019 | ✓ | 21-Jan-2019 | 23-Jan-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 16-Jan-2019 | 18-Jan-2019 | 23-Jan-2019 | ✓ | 21-Jan-2019 | 23-Jan-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM) | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 16-Jan-2019 | 18-Jan-2019 | 23-Jan-2019 | ✓ | 21-Jan-2019 | 23-Jan-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM) | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| CPT000_BH07_160119_0.2, | CPT000_BH07_160119_1.0, | | | | | | | |
| CPT000_BH05_160119_0.2, | CPT000_BH05_160119_1.0, | | | | | | | |
| CPT011W_BH03_160119_0.2, | CPT011W_BH03_160119_0.5, | | | | | | | |
| CPT061_BH22_160119_0.2, | CPT061_BH22_160119_1.5 | | | | | | | |

Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
CPT_QC313_160119 | 16-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 16-Jan-2019 | ✖ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F)
CPT_QC313_160119 | 16-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 15-Jul-2019 | ✓ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
CPT_QC313_160119 | 16-Jan-2019 | ---- | ---- | ---- | 23-Jan-2019 | 13-Feb-2019 | ✓ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Opaque plastic bottle - NaOH (EG050F)
CPT_QC313_160119 | 16-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 13-Feb-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| Opaque plastic bottle - NaOH (EK026SF)
CPT_QC313_160119 | 16-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 30-Jan-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
CPT_QC313_160119 | 16-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 13-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
CPT_QC313_160119 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 22-Jan-2019 | 03-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC313_160119 | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC313_160119 | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC313_160119 | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC313_160119 | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
CPT_QC313_160119 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 22-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC313_160119 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC313_160119 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC313_160119 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC313_160119 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 22-Jan-2019 | 03-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC413_160119, CPT_QC523,
CPT_QC522, CPT_QC527 | 16-Jan-2019 | 18-Jan-2019 | 30-Jan-2019 | ✓ | 18-Jan-2019 | 30-Jan-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC313_160119 | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC313_160119 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 22-Jan-2019 | 03-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC413_160119, CPT_QC523,
CPT_QC522, CPT_QC527 | 16-Jan-2019 | 18-Jan-2019 | 30-Jan-2019 | ✓ | 18-Jan-2019 | 30-Jan-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC313_160119 | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP080: BTEXN | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC413_160119, CPT_QC523,
CPT_QC522, CPT_QC527 | 16-Jan-2019 | 18-Jan-2019 | 30-Jan-2019 | ✓ | 18-Jan-2019 | 30-Jan-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC313_160119 | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 19 | 10.53 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 4 | 40 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 19 | 10.53 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 4 | 25.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 19 | 10.53 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 19 | 10.53 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 2 | 18 | 11.11 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 14 | 14.29 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 3 | 33.33 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 4 | 25.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 3 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 2 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 6 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 20 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 4 | 36 | 11.11 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 14 | 7.14 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 3 | 33.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 3 | 33.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 36 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 36 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 3 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 2 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 6 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 20 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 36 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|---------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | SOIL | In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|---|
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |

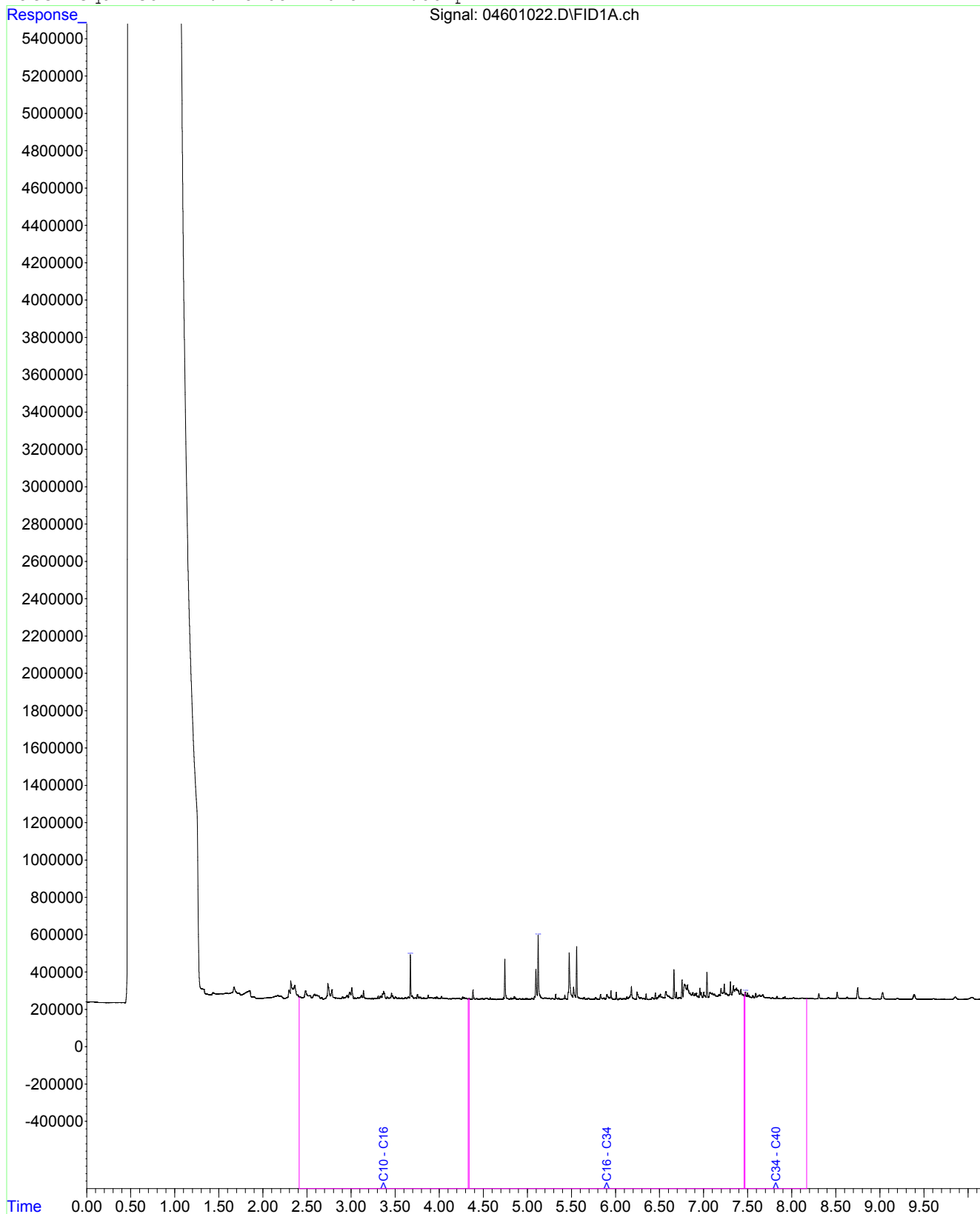


| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Preparation Methods | Method | Matrix | Method Descriptions |
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl2 extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |

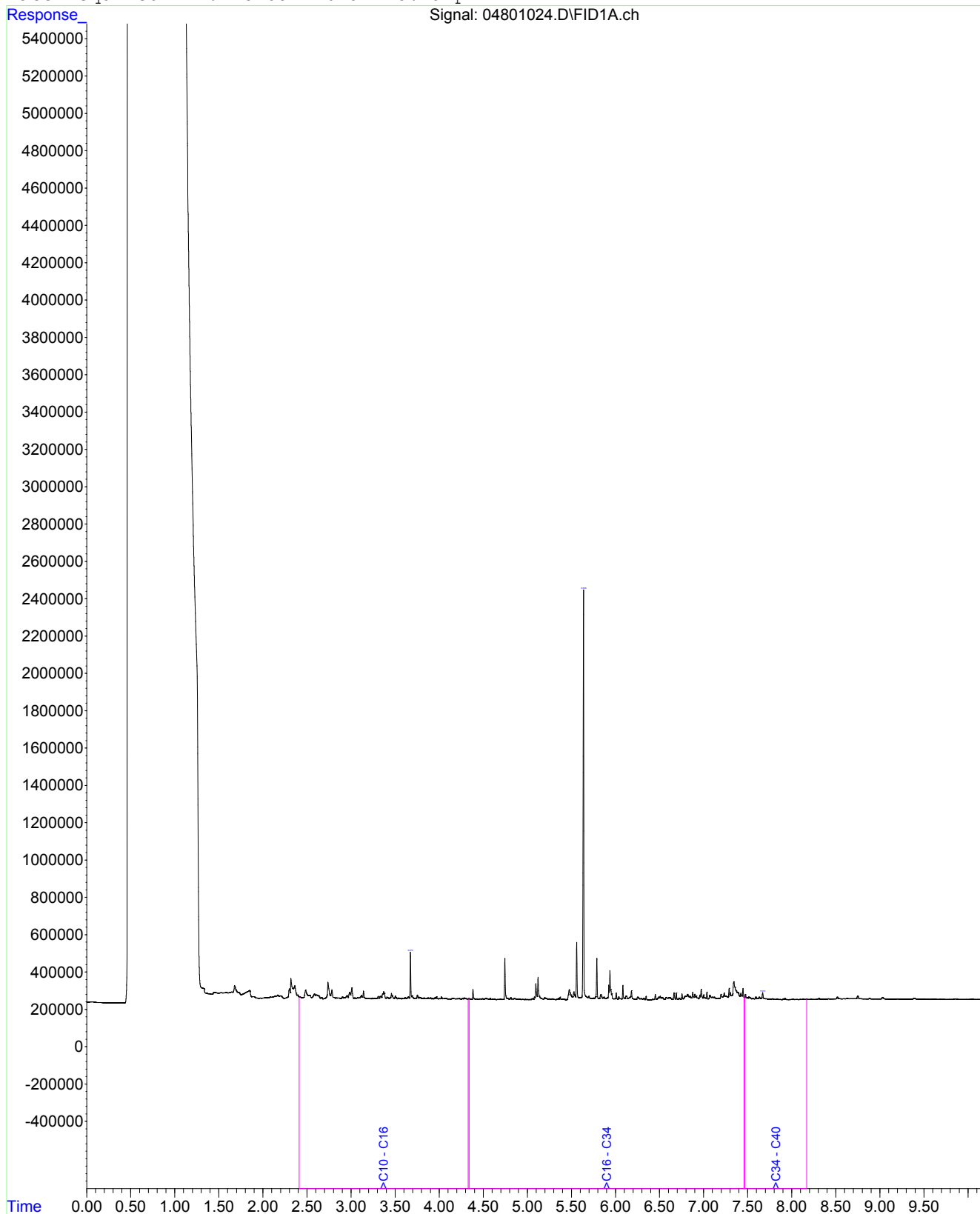


| Preparation Methods | Method | Matrix | Method Descriptions |
|--|----------|--------|---|
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

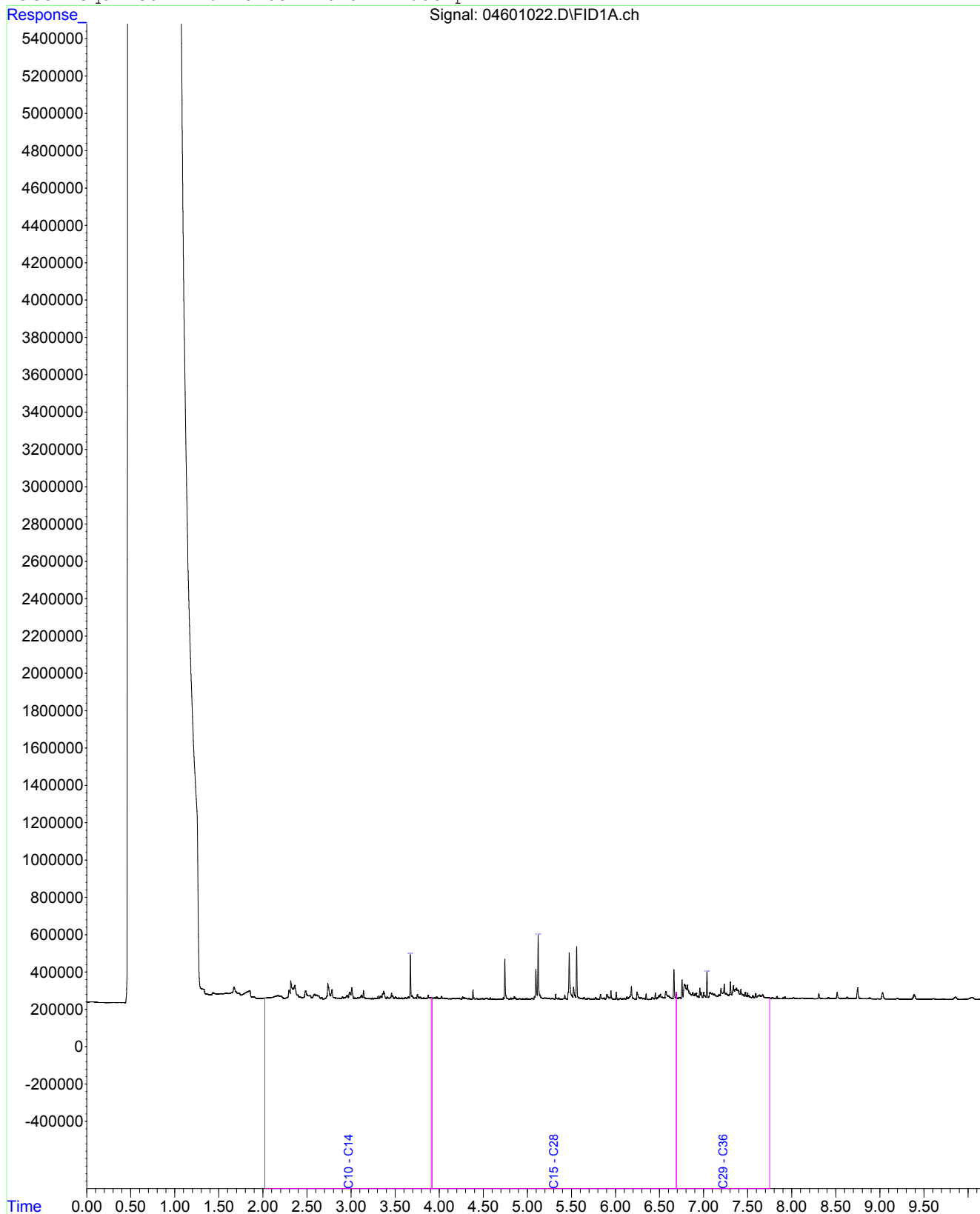
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Sample ID : CPT011W_BH03_160119_0.2
Date Acquired : 23 Jan 2019 2:58 pm



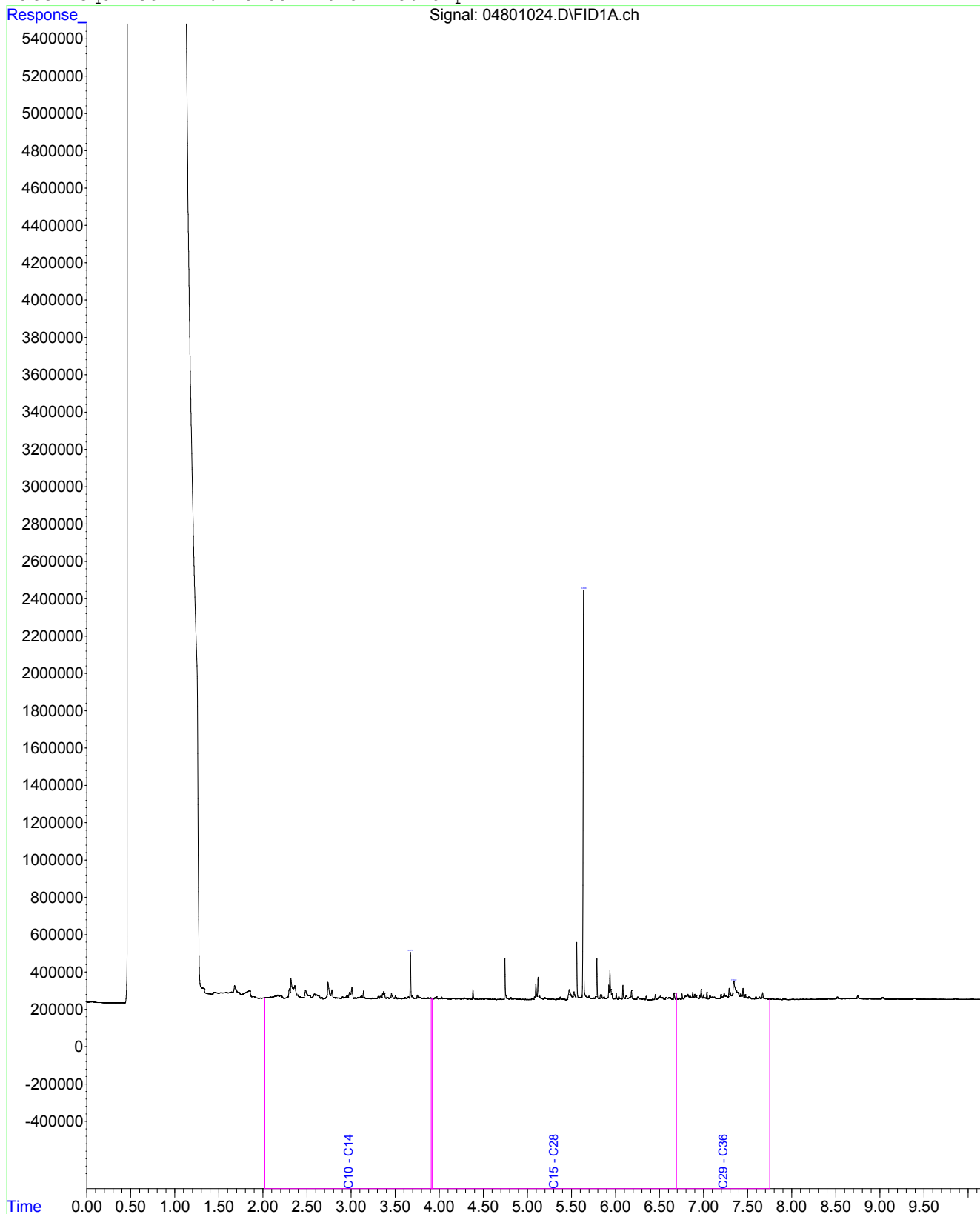
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Sample ID : CPT061_BH22_160119_0.2
Date Acquired : 23 Jan 2019 3:29 pm



Fraction Scheme : Standard
Data File : 04601022.D
Laboratory Number: EM1900529-013
Sample ID : CPT011W_BH03_160119_0.2
Date Acquired : 23 Jan 2019 2:58 pm



Fraction Scheme : Standard
Data File : 04801024.D
Laboratory Number: EM1900529-019
Sample ID : CPT061_BH22_160119_0.2
Date Acquired : 23 Jan 2019 3:29 pm



ANZ FQM - Generic Chain of Custody Form

| | | | | | | | |
|---|------------------|--|---------|--|--------------------|--------------------------|----------------------|
| CONSULTANT: AECOM | | ADDRESS/OFFICE: | | SAMPLER: POPPY | | Destination Laboratory | |
| PROJECT MANAGER (PM): [REDACTED] | | SITE: Gas Import Jetty Pipeline Project (GIJPP) EES | | MOBILE: [REDACTED] | | AL-S | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: [REDACTED] | | PHONE: [REDACTED] | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY
COOLER SEAL (note appropriate)
(mark) Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No | | COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | CPT002-BH101-0.0 | S | 16/1/19 | 7:00 | 1 X PFAS, JAR, ASS | 3 | |
| 2 | CPT002-BH101-0.5 | S | | 9:15 | | | ✓ P.S.S to be frozen |
| 3 | CPT002-BH101-1.0 | S | | 9:20 | | | ✓ |
| 4 | CPT002-BH101-1.5 | S | | 9:30 | | | ✓ |
| 5 | CPT002-BH101-2.0 | S | | 9:45 | | | ✓ |
| 6 | CPT002-BH101-2.5 | S | | 7:50 | | | ✓ |
| 7 | CPT001-BH111-0.0 | S | 16/1/19 | 10:00 | 1 X PFAS, JAR, ASS | 3 | |
| 8 | CPT001-BH111-0.5 | S | | 10:15 | | | ✓ |
| 9 | CPT001-BH111-1.0 | S | | 10:30 | | | ✓ |
| 10 | CPT001-BH111-1.5 | S | | 10:45 | | | ✓ |
| 11 | CPT001-BH111-2.0 | S | | 10:50 | | | ✓ |
| 12 | CPT001-BH111-2.5 | S | | 10:55 | | | ✓ |
| 13 | CPT001-BH110-0.0 | S | 16/1/19 | 11:20 | 1 X PFAS, JAR, ASS | 3 | |
| 14 | CPT001-BH110-0.5 | S | | 11:30 | | | ✓ |
| 15 | CPT001-BH110-1.0 | S | | 11:45 | | | ✓ |
| 16 | CPT001-BH110-1.5 | S | | 12:00 | | | ✓ |
| 17 | CPT001-BH110-2.0 | S | | 12:05 | | | ✓ |
| 18 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 19 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 20 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 21 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 22 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 23 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 24 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 25 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 26 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 27 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 28 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 29 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 30 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 31 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 32 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 33 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 34 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 35 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 36 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 37 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 38 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 39 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 40 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 41 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 42 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 43 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 44 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 45 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 46 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 47 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 48 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 49 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 50 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 51 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 52 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 53 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 54 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 55 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 56 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 57 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 58 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 59 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 60 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 61 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 62 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 63 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 64 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 65 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 66 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 67 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 68 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 69 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 70 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 71 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 72 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 73 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 74 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 75 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 76 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 77 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 78 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 79 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 80 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 81 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 82 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 83 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 84 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 85 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 86 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 87 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 88 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 89 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 90 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 91 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 92 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 93 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 94 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 95 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 96 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 97 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 98 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 99 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |
| 100 | CPT001-BH110-2.5 | S | | 12:15 | | | ✓ |

Environmental Division
Melbourne
Work Order Reference
EM1900531



Telephone : + 61-3-8649 9600

| | | | |
|---|-----------------------|---|-----------------------|
| RELINQUISHED BY: | | RECEIVED BY: | |
| Name: POPPY | Date: 16/01/19 | Name: Alice | Date: 16/01/19 |
| Of: AECOM | Time: 16:45 | Of: ALS | Time: 17:40 |
| Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide/Cd Preserved; AG = Amber Glass Unpreserved Plastic; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SC = Sulfuric Preserved; Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. | | Soil Container Codes: Jar = Unpreserved glass jar | |

ANZ
FQM - Generic Chain of Custody Form

| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: POPPY | | Destination Laboratory | | |
|--|-------------------|--|---------|--|--------------------|------------------------|---|---|
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GIJPP) EES | | MOBILE: | | ALS | | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | | |
| FOR LABORATORY USE ONLY
COOLER (See Notes Appendix)
(Date) (Time) (Temp) (N/A)
SAMPLE TEMPERATURE
CHILLED: Yes No | | | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

 | | | | Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | | |
| 20 | QC152-160119 | S | 16/1/19 | 10:00 | X PFAS, JAR, A.S.S | 3 | ✓ | |
| 21 | QC252-160119 | S | 16/1/19 | 11:45 | " | 3 | ✓ | |
| 22 | QC352-160119 | W | 16/1/19 | 14:30 | " | 9 | | |
| 23 | QC452-160119 | W | " | " | " | 3 | | |
| 24 | QC554-160119 | W | " | " | " | 2 | | |
| 25 | QC555-160119 | W | " | " | " | 2 | | |
| 26 | CPT051A-BH10-2-55 | S | 16/1/19 | 14:00 | X PFAS, JAR, A.S.S | 3 | ✓ | |
| 27 | CPT051A-BH10-1-05 | S | " | 14:10 | " | " | ✓ | |
| 28 | CPT051A-BH10-1-55 | S | " | 14:15 | " | " | ✓ | |
| 29 | CPT051A-BH10-2-05 | S | " | 14:20 | " | " | ✓ | |
| 30 | CPT051A-BH10-2-55 | S | " | 14:30 | " | " | ✓ | |
| 31 | QC556-160119 | W | " | 16:30 | 2 bottles | 2 | ✓ | |

| RELINQUISHED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
|------------------|----------|--------------|-------|--------------------|--|
| Name: | Date: | Name: | Date: | Cont' Note No: | |
| POPPY | 16/01/19 | | | | |
| AECOM | 16:45 | | | | |

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
 W = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
 E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Glass

COC Page 2 of 2

From: [REDACTED]@aecom.com>
Sent: Thursday, 17 January 2019 3:48 PM
To: [REDACTED]
Subject: RE: EM1900531 - AECOMAU - 60592634

H [REDACTED]
Please analyse:

1. CPT002_BH101_160119_0.0 = IWRG621 - PFAS Full Suite Low Level - 28 Analytes (EP231X)
2. CPT002_BH101_160119_0.5 = IWRG621 - PFAS Full Suite Low Level - 28 Analytes (EP231X)
3. CPT001_BH110_160119_0.0 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
4. CPT001_BH110_160119_0.5 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
5. CPT001_BH110_160119_1.0 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
6. CPT001_BH111_160119_0.0 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
7. CPT001_BH111_160119_0.5 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
8. CPT001_BH111_160119_1.0 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
9. CPT051A_BH18_160119_0.0 = IWRG621
10. CPT051A_BH18_160119_0.5 = IWRG621
11. CPT002_BH101_160119_0.5 = Chromium Suite (EA033)
12. CPT002_BH101_160119_1.5 = Chromium Suite (EA033)
13. CPT001_BH110_160119_0.5 = Chromium Suite (EA033)
14. CPT001_BH110_160119_1.5 = Chromium Suite (EA033)
15. CPT001_BH111_160119_0.5 = Chromium Suite (EA033)
16. CPT001_BH111_160119_1.5 = Chromium Suite (EA033)
17. CPT051A_BH18_160119_0.5 = Chromium Suite (EA033)
18. CPT051A_BH18_160119_1.5 = Chromium Suite (EA033)
19. QC152_160119 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X)
20. QC252_160119 = IWRG621, PFAS Full Suite Low Level - 28 Analytes (EP231X) (Triplicate, please forward to Eurofins)
21. QC352_160119 = IWRG621 water equivalent, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
22. QC452_160119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
23. QC554_160119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
24. QC555_160119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)
25. QC556_160119 = TPH(C6-C9)/BTEXN, PFAS Full Suite Low Level - 28 Analytes (EP231X-LL)

Item 23 - 25 – PFAS analysis for Trip Blanks in eskies containing CPT002_BH101, CPT001_BH110 and CPT001_BH111 samples only.

At standard TAT thanks!

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900531

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 3 |
| Order number | : ---- | Quote number | : EB2017AECOMAU0014 (EN/004/16) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : ---- | | |
| Sampler | : [REDACTED] | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 16-Jan-2019 17:40 | Issue Date | : 18-Jan-2019 |
| Client Requested Due Date | : 24-Jan-2019 | Scheduled Reporting Date | : 24-Jan-2019 |

Delivery Details

| | | | |
|----------------------|-----------|------------------------------------|-----------------------|
| Mode of Delivery | : Carrier | Security Seal | : Intact. |
| No. of coolers/boxes | : 3 | Temperature | : 9.7°C - Ice present |
| Receipt Detail | : | No. of samples received / analysed | : 30 / 19 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale, ALS Sydney and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|----------------------------------|--|
| Dissolved Mercury by FIMS : EG035F | | |
| QC352_160119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite A : EG020A-F | | |
| QC352_160119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite B : EG020B-F | | |
| QC352_160119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - EP231X (solids)
PFAS - Full Suite (28 analytes) | SOIL - P-16
IWRG 621 |
|----------------------|-----------------------------|------------------|---|--|--------------------------------------|---|-------------------------|
| EM1900531-001 | 16-Jan-2019 09:00 | CPT002_BH101_0.0 | | | □ | □ | □ |
| EM1900531-002 | 16-Jan-2019 09:15 | CPT002_BH101_0.5 | | □ | □ | □ | □ |
| EM1900531-003 | 16-Jan-2019 09:20 | CPT002_BH101_1.0 | □ | | | | |
| EM1900531-004 | 16-Jan-2019 09:30 | CPT002_BH101_1.5 | | □ | | | |
| EM1900531-005 | 16-Jan-2019 09:45 | CPT002_BH101_2.0 | □ | | | | |
| EM1900531-006 | 16-Jan-2019 09:50 | CPT002_BH101_2.5 | □ | | | | |
| EM1900531-007 | 16-Jan-2019 10:00 | CPT001_BH111_0.0 | | | □ | □ | □ |
| EM1900531-008 | 16-Jan-2019 10:15 | CPT001_BH111_0.5 | | □ | □ | □ | □ |
| EM1900531-009 | 16-Jan-2019 10:30 | CPT001_BH111_1.0 | | | □ | □ | □ |
| EM1900531-010 | 16-Jan-2019 10:45 | CPT001_BH111_1.5 | | □ | | | |
| EM1900531-011 | 16-Jan-2019 10:50 | CPT001_BH111_2.0 | □ | | | | |
| EM1900531-012 | 16-Jan-2019 10:55 | CPT001_BH111_2.5 | □ | | | | |
| EM1900531-013 | 16-Jan-2019 11:20 | CPT001_BH110_0.0 | | | □ | □ | □ |
| EM1900531-014 | 16-Jan-2019 11:30 | CPT001_BH110_0.5 | | □ | □ | □ | □ |
| EM1900531-015 | 16-Jan-2019 11:45 | CPT001_BH110_1.0 | | | □ | □ | □ |
| EM1900531-016 | 16-Jan-2019 12:00 | CPT001_BH110_1.5 | | □ | | | |
| EM1900531-017 | 16-Jan-2019 12:15 | CPT001_BH110_2.0 | □ | | | | |
| EM1900531-018 | 16-Jan-2019 13:50 | CPT001_BH110_2.5 | □ | | | | |
| EM1900531-019 | 16-Jan-2019 10:00 | CPT051A_BH18_0.0 | | | □ | | □ |
| EM1900531-020 | 16-Jan-2019 14:30 | QC152_160119 | | | □ | □ | □ |
| EM1900531-025 | 16-Jan-2019 00:00 | CPT051A_BH18_0.5 | | | □ | | □ |
| EM1900531-026 | 16-Jan-2019 14:10 | CPT051A_BH18_1.0 | □ | | | | |
| EM1900531-027 | 16-Jan-2019 14:15 | CPT051A_BH18_1.5 | □ | | | | |
| EM1900531-028 | 16-Jan-2019 14:20 | CPT051A_BH18_2.0 | □ | | | | |
| EM1900531-029 | 16-Jan-2019 14:30 | CPT051A_BH18_2.5 | □ | | | | |



Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - EP231X-LL
PFAS - Full Suite Low Level (29 analytes) |
|----------------------|-----------------------------|------------------|---|--|
| EM1900531-021 | 16-Jan-2019 14:30 | QC352_160119 | ☐ | ☐ |
| EM1900531-022 | 16-Jan-2019 14:30 | QC452_160119 | | ☐ |
| EM1900531-023 | 16-Jan-2019 14:30 | QC554_160119 | | ☐ |
| EM1900531-024 | 16-Jan-2019 14:00 | QC555_160119 | | ☐ |
| EM1900531-030 | 16-Jan-2019 16:30 | QC556_160119 | | ☐ |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|------------------------------------|
| EM1900531-022 | 16-Jan-2019 14:30 | QC452_160119 | ☐ |
| EM1900531-023 | 16-Jan-2019 14:30 | QC554_160119 | ☐ |
| EM1900531-024 | 16-Jan-2019 14:00 | QC555_160119 | ☐ |
| EM1900531-030 | 16-Jan-2019 16:30 | QC556_160119 | ☐ |

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- Chain of Custody (CoC) (COC)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- Electronic SRN for EQUIS (ESRN_EQUIS)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

Email
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Email



CERTIFICATE OF ANALYSIS

Work Order : **EM1900531**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : [REDACTED]
Site : ----
Quote number : EN/004/16
No. of samples received : 30
No. of samples analysed : 19

Page : 1 of 32
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 16-Jan-2019 17:40
Date Analysis Commenced : 18-Jan-2019
Issue Date : 24-Jan-2019 16:39



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|----------------------------------|---|
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | | Sydney Organics, Smithfield, NSW |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



□□□ □ □□□ □□□□

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- EP066/075-EM: Particular sample EM1900531_001 required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly.
- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- EG035T: EM1900531 #2 Poor matrix spike recovery for total mercury due to sample matrix.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH101_0.0 | CPT002_BH101_0.5 | CPT002_BH101_1.5 | CPT001_BH111_0.0 | CPT001_BH111_0.5 |
|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 09:00 | 16-Jan-2019 09:15 | 16-Jan-2019 09:30 | 16-Jan-2019 10:00 | 16-Jan-2019 10:15 |
| Compound | CAS Number | LOR | Unit | | EM1900531-001 | EM1900531-002 | EM1900531-004 | EM1900531-007 | EM1900531-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 4.9 | 5.0 | ---- | 4.2 | 5.5 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 5.0 | 4.8 | ---- | 5.3 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | 15 | 27 | ---- | 21 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | 0.02 | 0.04 | ---- | 0.03 |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | 0.008 | <0.005 | ---- | 0.006 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | 1.5 | ---- | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | 0.03 | 0.04 | ---- | 0.04 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | 20 | 27 | ---- | 24 |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | 2 | 2 | ---- | 2 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | 0.03 | 0.04 | ---- | 0.04 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | 20 | 27 | ---- | 24 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | 2 | 2 | ---- | 2 |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 7.5 | 12.8 | ---- | 2.7 | 23.1 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | 5 | <5 | ---- | 7 | 8 |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | | 6 | <5 | ---- | 22 | <5 |
| Lead | 7439-92-1 | 5 | mg/kg | | 10 | 6 | ---- | 9 | 10 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | 2 | <2 | ---- | 4 | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | | 4 | 5 | ---- | 7 | 14 |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | <2 | ---- | <2 | <2 |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | | 11 | <5 | ---- | 29 | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | 0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH101_0.0 | CPT002_BH101_0.5 | CPT002_BH101_1.5 | CPT001_BH111_0.0 | CPT001_BH111_0.5 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 09:00 | 16-Jan-2019 09:15 | 16-Jan-2019 09:30 | 16-Jan-2019 10:00 | 16-Jan-2019 10:15 |
| Compound | CAS Number | LOR | Unit | | EM1900531-001 | EM1900531-002 | EM1900531-004 | EM1900531-007 | EM1900531-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | 1 | <1 | ---- | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 70 | 120 | ---- | 190 | 190 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.2 | <0.1 | ---- | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | 1.9 | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | 0.8 | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | 2.7 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | 2.7 | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | <0.4 | ---- | <0.4 | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | <0.04 | ---- | <0.04 | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH101_0.0 | CPT002_BH101_0.5 | CPT002_BH101_1.5 | CPT001_BH111_0.0 | CPT001_BH111_0.5 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 09:00 | 16-Jan-2019 09:15 | 16-Jan-2019 09:30 | 16-Jan-2019 10:00 | 16-Jan-2019 10:15 |
| Compound | CAS Number | LOR | Unit | | EM1900531-001 | EM1900531-002 | EM1900531-004 | EM1900531-007 | EM1900531-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.07 | <0.05 | ---- | <0.05 | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.07 | <0.05 | ---- | <0.05 | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.15 | <0.05 | ---- | <0.05 | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | <0.2 | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | 0.7 | <0.5 | ---- | <0.5 | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH101_0.0 | CPT002_BH101_0.5 | CPT002_BH101_1.5 | CPT001_BH111_0.0 | CPT001_BH111_0.5 |
|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 09:00 | 16-Jan-2019 09:15 | 16-Jan-2019 09:30 | 16-Jan-2019 10:00 | 16-Jan-2019 10:15 |
| Compound | CAS Number | LOR | Unit | | EM1900531-001 | EM1900531-002 | EM1900531-004 | EM1900531-007 | EM1900531-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | 1.1 | <0.5 | ---- | <0.5 | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | 0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | 5.9 | <0.5 | ---- | <0.5 | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | 5.8 | <0.5 | ---- | <0.5 | <0.5 |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | 2.3 | <0.5 | ---- | <0.5 | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | 2.2 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | 3.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | 2.0 | <0.5 | ---- | <0.5 | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | 0.8 | <0.5 | ---- | <0.5 | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | 0.8 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | 25.6 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | 2.7 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 2.9 | 0.6 | ---- | 0.6 | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 3.2 | 1.2 | ---- | 1.2 | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| 4.4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.07 | <0.05 | ---- | <0.05 | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| 4.4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.07 | <0.05 | ---- | <0.05 | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH101_0.0 | CPT002_BH101_0.5 | CPT002_BH101_1.5 | CPT001_BH111_0.0 | CPT001_BH111_0.5 |
|--|--------------------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 09:00 | 16-Jan-2019 09:15 | 16-Jan-2019 09:30 | 16-Jan-2019 10:00 | 16-Jan-2019 10:15 |
| Compound | CAS Number | LOR | Unit | | EM1900531-001 | EM1900531-002 | EM1900531-004 | EM1900531-007 | EM1900531-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | <0.07 | <0.05 | ---- | <0.05 | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | | <0.07 | <0.05 | ---- | <0.05 | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.07 | <0.03 | ---- | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | <10 | ---- | <10 | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | <50 | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | <10 | ---- | <10 | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | 420 | <100 | ---- | <100 | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | 400 | <100 | ---- | <100 | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | 820 | <50 | ---- | <50 | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | <50 | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | 670 | <100 | ---- | <100 | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | 350 | <100 | ---- | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | 1020 | <50 | ---- | <50 | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | <50 | ---- | <50 | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | <10 | ---- | <10 | <10 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | <0.0002 | <0.0002 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | <0.0002 | <0.0002 |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | <0.0002 | <0.0002 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | <0.0002 | <0.0002 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | | 0.0003 | <0.0002 | ---- | <0.0002 | <0.0002 |

EP231D: (n:2) Fluorotelomer Sulfonic Acids



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT002_BH101_0.0 | CPT002_BH101_0.5 | CPT002_BH101_1.5 | CPT001_BH111_0.0 | CPT001_BH111_0.5 |
|---|--------------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 09:00 | 16-Jan-2019 09:15 | 16-Jan-2019 09:30 | 16-Jan-2019 10:00 | 16-Jan-2019 10:15 |
| Compound | CAS Number | LOR | Unit | | EM1900531-001 | EM1900531-002 | EM1900531-004 | EM1900531-007 | EM1900531-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | ---- | <0.0005 | <0.0005 |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | ---- | <0.0005 | <0.0005 |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | ---- | <0.0005 | <0.0005 |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | ---- | <0.0005 | <0.0005 |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.0002 | mg/kg | | 0.0003 | <0.0002 | ---- | <0.0002 | <0.0002 |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.0002 | mg/kg | | 0.0003 | <0.0002 | ---- | <0.0002 | <0.0002 |
| Sum of PFAS (WA DER List) | ---- | 0.0002 | mg/kg | | 0.0003 | <0.0002 | ---- | <0.0002 | <0.0002 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 99.7 | 86.9 | ---- | 115 | 104 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 63.0 | 70.6 | ---- | 85.4 | 69.3 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 61.6 | 85.2 | ---- | 86.0 | 79.9 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 74.0 | 94.4 | ---- | 93.7 | 86.3 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 107 | 93.0 | ---- | 99.6 | 101 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 88.7 | 76.1 | ---- | 81.4 | 79.2 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | 98.7 | 94.0 | ---- | 104 | 91.0 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | 108 | 91.4 | ---- | 97.3 | 94.4 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | 105 | 81.9 | ---- | 90.5 | 86.2 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | 115 | 99.2 | ---- | 105 | 102 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | 118 | 95.6 | ---- | 102 | 96.3 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | 113 | 91.3 | ---- | 97.4 | 91.6 |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | | 98.5 | 91.0 | ---- | 92.0 | 88.0 |
| 13C8-PFOA | ---- | 0.0002 | % | | 92.5 | 81.5 | ---- | 89.0 | 81.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH111_1.0 | CPT001_BH111_1.5 | CPT001_BH110_0.0 | CPT001_BH110_0.5 | CPT001_BH110_1.0 |
|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 10:30 | 16-Jan-2019 10:45 | 16-Jan-2019 11:20 | 16-Jan-2019 11:30 | 16-Jan-2019 11:45 |
| Compound | CAS Number | LOR | Unit | | EM1900531-009 | EM1900531-010 | EM1900531-013 | EM1900531-014 | EM1900531-015 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 5.6 | ---- | 5.1 | 5.8 | 5.9 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 4.9 | ---- | 5.3 | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | 22 | ---- | 19 | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | 0.04 | ---- | 0.03 | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | 0.006 | ---- | <0.005 | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | <10 | ---- | <10 | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | ---- | 1.5 | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | 0.04 | ---- | 0.03 | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | 26 | ---- | 19 | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | 2 | ---- | 1 | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | 0.04 | ---- | 0.03 | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | 26 | ---- | 19 | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | 2 | ---- | 1 | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 23.7 | ---- | 3.9 | 23.2 | 22.4 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | 15 | ---- | 11 | 8 | 6 |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | | <5 | ---- | 11 | <5 | <5 |
| Lead | 7439-92-1 | 5 | mg/kg | | 13 | ---- | 14 | 11 | 14 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | <2 | ---- | <2 | <2 | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | | 10 | ---- | 19 | 10 | 6 |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | ---- | <5 | <5 | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | ---- | <2 | <2 | <2 |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | | <5 | ---- | 97 | <5 | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | 0.6 | ---- | <0.5 | 0.5 | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH111_1.0 | CPT001_BH111_1.5 | CPT001_BH110_0.0 | CPT001_BH110_0.5 | CPT001_BH110_1.0 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 10:30 | 16-Jan-2019 10:45 | 16-Jan-2019 11:20 | 16-Jan-2019 11:30 | 16-Jan-2019 11:45 |
| Compound | CAS Number | LOR | Unit | | EM1900531-009 | EM1900531-010 | EM1900531-013 | EM1900531-014 | EM1900531-015 |
| | | | | Result | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 310 | ---- | 160 | 230 | 290 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | ---- | 2.1 | <0.5 | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | 0.9 | <0.5 | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | ---- | 3.0 | <0.2 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | ---- | 3.1 | <0.5 | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | <0.4 | <0.4 | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | ---- | <0.04 | <0.04 | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH111_1.0 | CPT001_BH111_1.5 | CPT001_BH110_0.0 | CPT001_BH110_0.5 | CPT001_BH110_1.0 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 10:30 | 16-Jan-2019 10:45 | 16-Jan-2019 11:20 | 16-Jan-2019 11:30 | 16-Jan-2019 11:45 |
| Compound | CAS Number | LOR | Unit | | EM1900531-009 | EM1900531-010 | EM1900531-013 | EM1900531-014 | EM1900531-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | ---- | <5 | <5 | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | ---- | <5 | <5 | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | ---- | <5 | <5 | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | ---- | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH111_1.0 | CPT001_BH111_1.5 | CPT001_BH110_0.0 | CPT001_BH110_0.5 | CPT001_BH110_1.0 |
|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 10:30 | 16-Jan-2019 10:45 | 16-Jan-2019 11:20 | 16-Jan-2019 11:30 | 16-Jan-2019 11:45 |
| Compound | CAS Number | LOR | Unit | | EM1900531-009 | EM1900531-010 | EM1900531-013 | EM1900531-014 | EM1900531-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | ---- | 1.6 | <0.5 | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | ---- | 1.4 | <0.5 | <0.5 |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | ---- | 0.6 | <0.5 | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | ---- | 0.8 | <0.5 | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | ---- | 1.3 | <0.5 | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | ---- | 0.5 | <0.5 | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | ---- | 6.2 | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | ---- | 0.7 | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | ---- | 1.0 | 0.6 | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | ---- | 1.2 | 1.2 | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH111_1.0 | CPT001_BH111_1.5 | CPT001_BH110_0.0 | CPT001_BH110_0.5 | CPT001_BH110_1.0 |
|--|--------------------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 10:30 | 16-Jan-2019 10:45 | 16-Jan-2019 11:20 | 16-Jan-2019 11:30 | 16-Jan-2019 11:45 |
| Compound | CAS Number | LOR | Unit | | EM1900531-009 | EM1900531-010 | EM1900531-013 | EM1900531-014 | EM1900531-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | ---- | <10 | <10 | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | ---- | <50 | <50 | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | ---- | <10 | <10 | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | <100 | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | <100 | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | <50 | ---- | <50 | <50 | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | ---- | <50 | <50 | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | <100 | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | <50 | ---- | <50 | <50 | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | ---- | <50 | <50 | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | ---- | <10 | <10 | <10 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | | <0.0002 | ---- | <0.0002 | <0.0002 | <0.0002 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | | <0.0002 | ---- | <0.0002 | <0.0002 | <0.0002 |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | | <0.0002 | ---- | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | | <0.0002 | ---- | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | | <0.0002 | ---- | 0.0002 | <0.0002 | <0.0002 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH111_1.0 | CPT001_BH111_1.5 | CPT001_BH110_0.0 | CPT001_BH110_0.5 | CPT001_BH110_1.0 |
|---|--------------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 10:30 | 16-Jan-2019 10:45 | 16-Jan-2019 11:20 | 16-Jan-2019 11:30 | 16-Jan-2019 11:45 |
| Compound | CAS Number | LOR | Unit | | EM1900531-009 | EM1900531-010 | EM1900531-013 | EM1900531-014 | EM1900531-015 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | ---- | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | ---- | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | ---- | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | ---- | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.0002 | mg/kg | <0.0002 | ---- | 0.0004 | <0.0002 | <0.0002 | <0.0002 |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.0002 | mg/kg | <0.0002 | ---- | 0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Sum of PFAS (WA DER List) | ---- | 0.0002 | mg/kg | <0.0002 | ---- | 0.0004 | <0.0002 | <0.0002 | <0.0002 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 85.7 | ---- | 94.7 | 95.2 | 114 | |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 65.5 | ---- | 71.3 | 64.0 | 71.3 | |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 74.1 | ---- | 73.4 | 67.6 | 69.7 | |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 85.9 | ---- | 85.5 | 86.8 | 85.0 | |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 91.6 | ---- | 108 | 107 | 101 | |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 74.4 | ---- | 86.9 | 84.4 | 79.7 | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 84.3 | ---- | 102 | 95.8 | 98.1 | |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 88.2 | ---- | 99.1 | 95.3 | 94.2 | |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 79.0 | ---- | 92.5 | 81.1 | 79.1 | |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 96.0 | ---- | 105 | 105 | 102 | |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 93.0 | ---- | 101 | 104 | 103 | |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 89.1 | ---- | 95.4 | 98.3 | 96.9 | |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | 75.5 | ---- | 73.5 | 94.0 | 78.5 | |
| 13C8-PFOA | ---- | 0.0002 | % | 68.5 | ---- | 78.5 | 92.0 | 72.5 | |



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|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH110_1.5 | CPT051A_BH18_0.0 | QC152_160119 | CPT051A_BH18_0.5 | ---- |
| Client sampling date / time | | | | | 16-Jan-2019 12:00 | 16-Jan-2019 10:00 | 16-Jan-2019 14:30 | 16-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900531-016 | EM1900531-019 | EM1900531-020 | EM1900531-025 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | ---- | 4.6 | 5.6 | 4.9 | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | 4.9 | ---- | ---- | ---- | ---- |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | 20 | ---- | ---- | ---- | ---- |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | 0.03 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | 0.007 | ---- | ---- | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | <10 | ---- | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | 1.5 | ---- | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | 0.04 | ---- | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | 24 | ---- | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | 2 | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | 0.04 | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | 24 | ---- | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | 2 | ---- | ---- | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | ---- | 4.4 | 22.4 | 18.1 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | ---- | <5 | 16 | 18 | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | | ---- | <1 | <1 | <1 | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | | ---- | <5 | <5 | <5 | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | | ---- | <5 | 14 | 9 | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | ---- | <2 | <2 | <2 | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | | ---- | <2 | 10 | 9 | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | | ---- | <5 | <5 | <5 | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | | ---- | <2 | <2 | <2 | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | | ---- | <5 | <5 | <5 | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | | ---- | <5 | <5 | 6 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | ---- | <0.1 | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |



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|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH110_1.5 | CPT051A_BH18_0.0 | QC152_160119 | CPT051A_BH18_0.5 | ---- |
| Client sampling date / time | | | | | 16-Jan-2019 12:00 | 16-Jan-2019 10:00 | 16-Jan-2019 14:30 | 16-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900531-016 | EM1900531-019 | EM1900531-020 | EM1900531-025 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | ---- | 1 | <1 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | ---- | 150 | 490 | 670 | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | ---- | <0.1 | <0.1 | <0.1 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | ---- | <0.2 | <0.2 | <0.2 | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | ---- | <0.2 | <0.2 | <0.2 | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | ---- | <1 | <1 | <1 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | ---- | <0.02 | <0.02 | <0.02 | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | ---- | <0.01 | <0.01 | <0.01 | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | ---- | <0.4 | <0.4 | <0.4 | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | ---- | <0.02 | <0.02 | <0.02 | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | ---- | <0.01 | <0.01 | <0.01 | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | ---- | <0.02 | <0.02 | <0.02 | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | ---- | <0.01 | <0.01 | <0.01 | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | ---- | <0.01 | <0.01 | <0.01 | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | ---- | <0.02 | <0.02 | <0.02 | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | ---- | <0.02 | <0.02 | <0.02 | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | ---- | <0.04 | <0.04 | <0.04 | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | ---- | <0.02 | <0.02 | <0.02 | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | ---- | <0.01 | <0.01 | <0.01 | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | ---- | <0.02 | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | ---- | <0.02 | <0.02 | <0.02 | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | ---- | <0.02 | <0.02 | <0.02 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH110_1.5 | CPT051A_BH18_0.0 | QC152_160119 | CPT051A_BH18_0.5 | ---- |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 16-Jan-2019 12:00 | 16-Jan-2019 10:00 | 16-Jan-2019 14:30 | 16-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900531-016 | EM1900531-019 | EM1900531-020 | EM1900531-025 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | ---- | <0.02 | <0.02 | <0.02 | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | ---- | <0.02 | <0.02 | <0.02 | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | ---- | <0.01 | <0.01 | <0.01 | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | ---- | <0.01 | <0.01 | <0.01 | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | ---- | <0.01 | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | ---- | <0.05 | <0.05 | <0.05 | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | ---- | <0.05 | <0.05 | <0.05 | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | ---- | <0.05 | <0.05 | <0.05 | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | ---- | <0.2 | <0.2 | <0.2 | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | ---- | <1 | <1 | <1 | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | ---- | <1 | <1 | <1 | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | ---- | <1 | <1 | <1 | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | ---- | <1 | <1 | <1 | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | ---- | <1 | <1 | <1 | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | ---- | <5 | <5 | <5 | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | ---- | <5 | <5 | <5 | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | ---- | <5 | <5 | <5 | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | | ---- | <5 | <5 | <5 | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | ---- | <5 | <5 | <5 | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | ---- | <1 | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH110_1.5 | CPT051A_BH18_0.0 | QC152_160119 | CPT051A_BH18_0.5 | ---- |
|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 16-Jan-2019 12:00 | 16-Jan-2019 10:00 | 16-Jan-2019 14:30 | 16-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900531-016 | EM1900531-019 | EM1900531-020 | EM1900531-025 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | ---- | <0.5 | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | ---- | 0.6 | 0.6 | 0.6 | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | ---- | 1.2 | 1.2 | 1.2 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | ---- | <0.05 | <0.05 | <0.05 | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | | ---- | <0.05 | <0.05 | <0.05 | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |



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|--|--------------------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH110_1.5 | CPT051A_BH18_0.0 | QC152_160119 | CPT051A_BH18_0.5 | ---- |
| Client sampling date / time | | | | | 16-Jan-2019 12:00 | 16-Jan-2019 10:00 | 16-Jan-2019 14:30 | 16-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900531-016 | EM1900531-019 | EM1900531-020 | EM1900531-025 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | ---- | <0.05 | <0.05 | <0.05 | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | | ---- | <0.05 | <0.05 | <0.05 | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | ---- | <10 | <10 | <10 | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | ---- | <50 | <50 | <50 | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | ---- | <10 | <10 | <10 | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | ---- | 110 | <100 | <100 | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | ---- | 100 | <100 | <100 | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | ---- | 210 | <50 | <50 | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | ---- | <50 | <50 | <50 | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | ---- | 170 | <100 | <100 | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | ---- | <100 | <100 | <100 | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | ---- | 170 | <50 | <50 | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | ---- | <50 | <50 | <50 | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | ---- | <10 | <10 | <10 | ---- |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | | ---- | ---- | <0.0002 | ---- | ---- |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | | ---- | ---- | <0.0002 | ---- | ---- |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | | ---- | ---- | <0.0002 | ---- | ---- |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | | ---- | ---- | <0.0002 | ---- | ---- |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | | ---- | ---- | <0.0002 | ---- | ---- |

EP231D: (n:2) Fluorotelomer Sulfonic Acids



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|--|--------------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH110_1.5 | CPT051A_BH18_0.0 | QC152_160119 | CPT051A_BH18_0.5 | ---- |
| Client sampling date / time | | | | | 16-Jan-2019 12:00 | 16-Jan-2019 10:00 | 16-Jan-2019 14:30 | 16-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900531-016 | EM1900531-019 | EM1900531-020 | EM1900531-025 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid
(4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | | ---- | ---- | <0.0005 | ---- | ---- |
| 6:2 Fluorotelomer sulfonic acid
(6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | | ---- | ---- | <0.0005 | ---- | ---- |
| 8:2 Fluorotelomer sulfonic acid
(8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | | ---- | ---- | <0.0005 | ---- | ---- |
| 10:2 Fluorotelomer sulfonic acid
(10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | | ---- | ---- | <0.0005 | ---- | ---- |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.0002 | mg/kg | | ---- | ---- | <0.0002 | ---- | ---- |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.0002 | mg/kg | | ---- | ---- | <0.0002 | ---- | ---- |
| Sum of PFAS (WA DER List) | ---- | 0.0002 | mg/kg | | ---- | ---- | <0.0002 | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | ---- | 109 | 108 | 112 | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | ---- | 76.9 | 72.0 | 72.3 | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | ---- | 65.4 | 80.4 | 73.8 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | ---- | 88.6 | 90.2 | 88.0 | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | ---- | 104 | 102 | 106 | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | ---- | 81.0 | 82.3 | 84.9 | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | ---- | 101 | 99.7 | 109 | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | ---- | 95.9 | 97.7 | 100 | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | ---- | 88.0 | 88.3 | 89.9 | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | ---- | 102 | 105 | 110 | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | ---- | 98.8 | 101 | 106 | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | ---- | 99.1 | 97.5 | 101 | ---- |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | | ---- | ---- | 90.5 | ---- | ---- |
| 13C8-PFOA | ---- | 0.0002 | % | | ---- | ---- | 79.0 | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC352_160119 | QC452_160119 | QC554_160119 | QC555_160119 | QC556_160119 |
|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:00 | 16-Jan-2019 16:30 |
| Compound | CAS Number | LOR | Unit | | EM1900531-021 | EM1900531-022 | EM1900531-023 | EM1900531-024 | EM1900531-030 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | 8.81 | ---- | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | ---- | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | ---- | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | ---- | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | ---- | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | ---- | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | ---- | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | ---- | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | ---- | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC352_160119 | QC452_160119 | QC554_160119 | QC555_160119 | QC556_160119 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:00 | 16-Jan-2019 16:30 |
| Compound | CAS Number | LOR | Unit | | EM1900531-021 | EM1900531-022 | EM1900531-023 | EM1900531-024 | EM1900531-030 |
| | | | | | Result | Result | Result | Result | Result |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC352_160119 | QC452_160119 | QC554_160119 | QC555_160119 | QC556_160119 |
|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:00 | 16-Jan-2019 16:30 |
| Compound | CAS Number | LOR | Unit | | EM1900531-021 | EM1900531-022 | EM1900531-023 | EM1900531-024 | EM1900531-030 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC352_160119 | QC452_160119 | QC554_160119 | QC555_160119 | QC556_160119 |
|--|-------------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:00 | 16-Jan-2019 16:30 |
| Compound | CAS Number | LOR | Unit | | EM1900531-021 | EM1900531-022 | EM1900531-023 | EM1900531-024 | EM1900531-030 |
| | | | | | Result | Result | Result | Result | Result |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.002 | µg/L | | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.002 | µg/L | | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.002 | µg/L | | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.002 | µg/L | | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.002 | µg/L | | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.002 | µg/L | | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.01 | µg/L | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC352_160119 | QC452_160119 | QC554_160119 | QC555_160119 | QC556_160119 |
|--|-------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:00 | 16-Jan-2019 16:30 |
| Compound | CAS Number | LOR | Unit | | EM1900531-021 | EM1900531-022 | EM1900531-023 | EM1900531-024 | EM1900531-030 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP231B: Perfluoroalkyl Carboxylic Acids - Continued | | | | | | | | | |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.002 | µg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.002 | µg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.002 | µg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.002 | µg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.002 | µg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.002 | µg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.002 | µg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.002 | µg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.002 | µg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.005 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.005 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.002 | µg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.005 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.005 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.005 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.005 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.002 | µg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.002 | µg/L | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.005 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC352_160119 | QC452_160119 | QC554_160119 | QC555_160119 | QC556_160119 |
|---|--------------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:00 | 16-Jan-2019 16:30 |
| Compound | CAS Number | LOR | Unit | | EM1900531-021 | EM1900531-022 | EM1900531-023 | EM1900531-024 | EM1900531-030 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued | | | | | | | | | |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.005 | µg/L | | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.005 | µg/L | | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.005 | µg/L | | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.002 | µg/L | | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.002 | µg/L | | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Sum of PFAS (WA DER List) | ---- | 0.002 | µg/L | | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 99.0 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 85.5 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 87.4 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 91.1 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 16.1 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 30.0 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 61.1 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 41.0 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 68.0 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 89.3 | ---- | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.25 | % | | 33.1 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.25 | % | | 76.8 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.25 | % | | 82.2 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.25 | % | | 84.3 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.25 | % | | 86.5 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.25 | % | | 98.2 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.25 | % | | 97.4 | ---- | ---- | ---- | ---- |



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|---|------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC352_160119 | QC452_160119 | QC554_160119 | QC555_160119 | QC556_160119 |
| Client sampling date / time | | | | | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:30 | 16-Jan-2019 14:00 | 16-Jan-2019 16:30 |
| Compound | CAS Number | LOR | Unit | | EM1900531-021 | EM1900531-022 | EM1900531-023 | EM1900531-024 | EM1900531-030 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | | | | | | | |
| 4-Terphenyl-d14 | 1718-51-0 | 0.25 | % | | 91.4 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 89.5 | 91.3 | 90.1 | 93.0 | 98.8 |
| Toluene-D8 | 2037-26-5 | 2 | % | | 90.2 | 85.6 | 94.1 | 90.0 | 95.4 |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 102 | 94.9 | 103 | 99.9 | 110 |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.002 | % | | 65.0 | 86.3 | 89.9 | 86.9 | 83.9 |
| 13C8-PFOA | ---- | 0.002 | % | | 80.1 | 93.4 | 91.3 | 88.5 | 94.5 |



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| Sub-Matrix: SOIL | | □□□□ □□□ □ s □ | |
|---|------------|----------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |
| EP231S: PFAS Surrogate | | | |
| 13C4-PFOS | ---- | 60 | 120 |
| 13C8-PFOA | ---- | 60 | 120 |

| Sub-Matrix: WATER | | □□□□ □□□ □ s □ | |
|---|------------|----------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 13 | 90 |
| 2-Chlorophenol-D4 | 93951-73-6 | 42 | 117 |

| Sub-Matrix: WATER | |     | |
|--|------------|---|-----|
| Compound | CAS Number | % | |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 52 | 140 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 49 | 136 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 49 | 128 |
| 2-Fluorobiphenyl | 321-60-8 | 57 | 137 |
| Anthracene-d10 | 1719-06-8 | 67 | 137 |
| 4-Terphenyl-d14 | 1718-51-0 | 66 | 136 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |
| EP231S: PFAS Surrogate | | | |
| 13C4-PFOS | ---- | 60 | 120 |
| 13C8-PFOA | ---- | 60 | 120 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900531 | Page | : 1 of 14 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 16-Jan-2019 17:40 |
| Order number | : ---- | Date Analysed | : 18-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 24-Jan-2019 16:40 |
| No. of samples received | : 30 | | |
| No. of samples analysed | : 19 | Quote number | : EN/004/16 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| Client Sample ID | ALS Sample ID | Compound | Method | LOR | Limits | Result |
|------------------|---------------|---|--------------|-----|-------------|------------|
| CPT002_BH101_0.0 | EM1900531-001 | Benzo(a)pyrene | EP075-EM | 0.5 | < 1 mg/kg | 2.0 mg/kg |
| CPT002_BH101_0.0 | EM1900531-001 | Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | < 20 mg/kg | 25.6 mg/kg |
| CPT051A_BH18_0.5 | EM1900531-025 | Fluoride | EK040T | 40 | < 450 mg/kg | 670 mg/kg |

Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT002_BH10
1_0.0 | CPT002_BH10
1_0.5 | CPT001_BH11
1_0.0 | CPT001_BH11
1_0.5 | CPT001_BH11
1_1.0 |
|--|--------------|------|---------|--------------------|--------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | 16-Jan-2019
09:00
EM1900531-001 | 16-Jan-2019
09:15
EM1900531-002 | 16-Jan-2019
10:00
EM1900531-007 | 16-Jan-2019
10:15
EM1900531-008 | 16-Jan-2019
10:30
EM1900531-009 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 4.9 | 5.0 | 4.2 | 5.5 | 5.6 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 5 | <5 | 7 | 8 | 15 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 6 | <5 | 22 | <5 | <5 |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 10 | 6 | 9 | 10 | 13 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | 2 | <2 | 4 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 4 | 5 | 7 | 14 | 10 |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | <2 |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 11 | <5 | 29 | <5 | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | 0.6 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | 1 | <1 | <1 | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 70 | 120 | 190 | 190 | 310 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | 2.7 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.07 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT002_BH10
1_0.0 | CPT002_BH10
1_0.5 | CPT001_BH11
1_0.0 | CPT001_BH11
1_0.5 | CPT001_BH11
1_1.0 |
|--|--------------|------|-------|--------------------|--------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 16-Jan-2019
09:00 | 16-Jan-2019
09:15 | 16-Jan-2019
10:00 | 16-Jan-2019
10:15 | 16-Jan-2019
10:30 |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900531-001 | EM1900531-002 | EM1900531-007 | EM1900531-008 | EM1900531-009 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | 2.0 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | 25.6 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.07 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.07 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.07 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.07 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.07 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | 820 | <50 | <50 | <50 | <50 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT002_BH10
1_0.0 | CPT002_BH10
1_0.5 | CPT001_BH11
1_0.0 | CPT001_BH11
1_0.5 | CPT001_BH11
1_1.0 | | |
|--|--------------|------|---------|--------------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------|---------------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | □□ □□
□□ □ | □□□□
□□ □ | | | | | | EM1900531-001 | EM1900531-002 |
| Compound | Method | LOR | Unit | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.9 | 5.0 | 4.2 | 5.5 | 5.6 | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | 5 | <5 | 7 | 8 | 15 | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | <1 | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 6 | <5 | 22 | <5 | <5 | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 10 | 6 | 9 | 10 | 13 | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | 2 | <2 | 4 | <2 | <2 | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 4 | 5 | 7 | 14 | 10 | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | <2 | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 11 | <5 | 29 | <5 | <5 | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | 0.6 | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | 1 | <1 | <1 | <1 | <1 | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 70 | 120 | 190 | 190 | 310 | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | 2.7 | <0.2 | <0.2 | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.07 | <0.03 | <0.03 | <0.03 | <0.03 | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | <1 | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT002_BH10
1_0.0 | CPT002_BH10
1_0.5 | CPT001_BH11
1_0.0 | CPT001_BH11
1_0.5 | CPT001_BH11
1_1.0 | | |
|---|--------------|------|-------|--------------------|-------|----------------------|----------------------|----------------------|----------------------|----------------------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | □□ □□ | □□□□ | | | | | | | |
| Compound | Method | LOR | Unit | □□ □ | □□ □ | EM1900531-001 | EM1900531-002 | EM1900531-007 | EM1900531-008 | EM1900531-009 | | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | 2.0 | <0.5 | <0.5 | <0.5 | <0.5 | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | 25.6 | <0.5 | <0.5 | <0.5 | <0.5 | | |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.07 | <0.03 | <0.03 | <0.03 | <0.03 | | |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.07 | <0.03 | <0.03 | <0.03 | <0.03 | | |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.07 | <0.05 | <0.05 | <0.05 | <0.05 | | |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.07 | <0.03 | <0.03 | <0.03 | <0.03 | | |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.07 | <0.03 | <0.03 | <0.03 | <0.03 | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | <10 | <10 | <10 | <10 | | |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | 820 | <50 | <50 | <50 | <50 | | |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT002_BH10
1_0.0 | CPT002_BH10
1_0.5 | CPT001_BH11
1_0.0 | CPT001_BH11
1_0.5 | CPT001_BH11
1_1.0 |
|--|--------------|------|---------|--------------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | EM1900531-001 | EM1900531-002 | EM1900531-007 | EM1900531-008 | EM1900531-009 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.9 | 5.0 | 4.2 | 5.5 | 5.6 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | 5 | <5 | 7 | 8 | 15 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 6 | <5 | 22 | <5 | <5 |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 10 | 6 | 9 | 10 | 13 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | 2 | <2 | 4 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 4 | 5 | 7 | 14 | 10 |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 11 | <5 | 29 | <5 | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | 0.6 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | 1 | <1 | <1 | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 70 | 120 | 190 | 190 | 310 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.2 | <0.1 | <0.1 | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | 2.7 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.07 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | Client sample ID | | CPT002_BH10
1_0.0 | CPT002_BH10
1_0.5 | CPT001_BH11
1_0.0 | CPT001_BH11
1_0.5 | CPT001_BH11
1_1.0 |
|---|--------------|------|-------|------------------|---------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 16-Jan-2019
09:00 | 16-Jan-2019
09:15 | 16-Jan-2019
10:00 | 16-Jan-2019
10:15 | 16-Jan-2019
10:30 |
| Compound | Method | LOR | Unit | □□□□
□□□ □ | □□□□
□□□ □ | EM1900531-001 | EM1900531-002 | EM1900531-007 | EM1900531-008 | EM1900531-009 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | 2.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | 25.6 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.07 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | 820 | <50 | <50 | <50 | <50 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT001_BH11
0_0.0 | CPT001_BH11
0_0.5 | CPT001_BH11
0_1.0 | CPT051A_BH1
8_0.0 | CPT051A_BH1
8_0.5 |
|---|--------------|------|---------|------------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 16-Jan-2019
11:20 | 16-Jan-2019
11:30 | 16-Jan-2019
11:45 | 16-Jan-2019
10:00 | 16-Jan-2019
15:00 |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1900531-013 | EM1900531-014 | EM1900531-015 | EM1900531-019 | EM1900531-025 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.1 | 5.8 | 5.9 | 4.6 | 4.9 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 11 | 8 | 6 | <5 | 18 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 11 | <5 | <5 | <5 | <5 |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 14 | 11 | 14 | <5 | 9 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 19 | 10 | 6 | <2 | 9 |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | <2 |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 97 | <5 | <5 | <5 | 6 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | 0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | <1 | <1 | 1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 160 | 230 | 290 | 150 | 670 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | 3.0 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT001_BH11
0_0.0 | CPT001_BH11
0_0.5 | CPT001_BH11
0_1.0 | CPT051A_BH1
8_0.0 | CPT051A_BH1
8_0.5 |
|--|--------------|------|-------|------------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 16-Jan-2019
11:20 | 16-Jan-2019
11:30 | 16-Jan-2019
11:45 | 16-Jan-2019
10:00 | 16-Jan-2019
15:00 |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1900531-013 | EM1900531-014 | EM1900531-015 | EM1900531-019 | EM1900531-025 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | 6.2 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | <50 | <50 | 210 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT001_BH11
0_0.0 | CPT001_BH11
0_0.5 | CPT001_BH11
0_1.0 | CPT051A_BH1
8_0.0 | CPT051A_BH1
8_0.5 |
|--|--------------|------|---------|--------------------|--------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| | | | | Sampling date/time | | | | | | |
| | | | | □□ □□
□□ □ | □□□□
□□ □ | 16-Jan-2019
11:20
EM1900531-013 | 16-Jan-2019
11:30
EM1900531-014 | 16-Jan-2019
11:45
EM1900531-015 | 16-Jan-2019
10:00
EM1900531-019 | 16-Jan-2019
15:00
EM1900531-025 |
| Compound | Method | LOR | Unit | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.1 | 5.8 | 5.9 | 4.6 | 4.9 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | 11 | 8 | 6 | <5 | 18 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 11 | <5 | <5 | <5 | <5 |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 14 | 11 | 14 | <5 | 9 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 19 | 10 | 6 | <2 | 9 |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 97 | <5 | <5 | <5 | 6 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | 0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | <1 | <1 | 1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 160 | 230 | 290 | 150 | 670 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | 3.0 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | CPT001_BH11
0_0.0 | CPT001_BH11
0_0.5 | CPT001_BH11
0_1.0 | CPT051A_BH1
8_0.0 | CPT051A_BH1
8_0.5 |
|--|--------------|------|-------|------------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 16-Jan-2019
11:20 | 16-Jan-2019
11:30 | 16-Jan-2019
11:45 | 16-Jan-2019
10:00 | 16-Jan-2019
15:00 |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1900531-013 | EM1900531-014 | EM1900531-015 | EM1900531-019 | EM1900531-025 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | 6.2 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | <50 | <50 | <50 | 210 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT001_BH11
0_0.0 | CPT001_BH11
0_0.5 | CPT001_BH11
0_1.0 | CPT051A_BH1
8_0.0 | CPT051A_BH1
8_0.5 |
|--|--------------|------|---------|--------------------|-----|----------------------|----------------------|----------------------|----------------------|----------------------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | | | 16-Jan-2019
11:20 | 16-Jan-2019
11:30 | 16-Jan-2019
11:45 | 16-Jan-2019
10:00 | 16-Jan-2019
15:00 |
| | | | | | | EM1900531-013 | EM1900531-014 | EM1900531-015 | EM1900531-019 | EM1900531-025 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.1 | 5.8 | 5.9 | 4.6 | 4.9 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | 11 | 8 | 6 | <5 | 18 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 11 | <5 | <5 | <5 | <5 |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 14 | 11 | 14 | <5 | 9 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 19 | 10 | 6 | <2 | 9 |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 97 | <5 | <5 | <5 | 6 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | 0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | <1 | <1 | 1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 160 | 230 | 290 | 150 | 670 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | 3.0 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | |
|---|--------------|------|-------|--------------------|------|---------------|---------------|---------------|---------------|---------------|
| Sub-Matrix: SOIL | | | | Client sample ID | | CPT001_BH11 | CPT001_BH11 | CPT001_BH11 | CPT051A_BH1 | CPT051A_BH1 |
| | | | | Sampling date/time | | 0_0.0 | 0_0.5 | 0_1.0 | 8_0.0 | 8_0.5 |
| | | | | | | 16-Jan-2019 | 16-Jan-2019 | 16-Jan-2019 | 16-Jan-2019 | 16-Jan-2019 |
| | | | | | | 11:20 | 11:30 | 11:45 | 10:00 | 15:00 |
| | | | | | | EM1900531-013 | EM1900531-014 | EM1900531-015 | EM1900531-019 | EM1900531-025 |
| Compound | Method | LOR | Unit | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | 6.2 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | <50 | <50 | 210 | <50 |

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|--|
| Work Order | : EM1900531 | Page | : 1 of 27 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 16-Jan-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 18-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 24-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : ---- | | |
| Quote number | : EN/004/16 | | |
| No. of samples received | : 30 | | |
| No. of samples analysed | : 19 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□□□ □□ □□

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

□□□□□

Senior Acid Sulfate Soil Chemist
Senior Inorganic Chemist

Senior Organic Chemist

□□□ □□□ □□ □□ □

Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Sydney Organics, Smithfield, NSW
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2146733) | | | | | | | | | |
| EM1900529-001 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 4.6 | 4.5 | 2.20 | 0% - 20% |
| EM1900697-007 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 4.5 | 4.5 | 0.00 | 0% - 20% |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2147767) | | | | | | | | | |
| EM1900529-007 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 4.4 | 4.3 | 2.30 | 0% - 20% |
| EM1900531-013 | CPT001_BH110_0.0 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.1 | 5.0 | 1.98 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2151277) | | | | | | | | | |
| EM1900529-008 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.06 | 0.06 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 40 | 39 | 4.32 | 0% - 20% |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 4.5 | 4.5 | 0.00 | 0% - 20% |
| EM1900531-014 | CPT001_BH110_0.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.03 | 0.03 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 19 | 18 | 10.0 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 5.3 | 5.4 | 1.87 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2151277) | | | | | | | | | |
| EM1900529-008 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.007 | 0.008 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EM1900531-014 | CPT001_BH110_0.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | <0.005 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2143534) | | | | | | | | | |
| EM1900472-022 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 4.5 | 4.3 | 3.20 | No Limit |
| EM1900531-001 | CPT002_BH101_0.0 | EA055: Moisture Content | ---- | 0.1 | % | 7.5 | 6.6 | 12.6 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2143535) | | | | | | | | | |
| EM1900531-025 | CPT051A_BH18_0.5 | EA055: Moisture Content | ---- | 0.1 | % | 18.1 | 17.3 | 4.40 | 0% - 50% |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2143535) - continued | | | | | | | | | |
| EM1900594-011 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 13.2 | 13.6 | 2.82 | 0% - 50% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2143602) | | | | | | | | | |
| EM1900531-001 | CPT002_BH101_0.0 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | 2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 4 | 4 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 6 | 7 | 20.0 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 10 | 10 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 11 | 13 | 18.0 | No Limit |
| EM1900531-020 | QC152_160119 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 10 | 10 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 16 | 18 | 10.7 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 14 | 11 | 23.2 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2143601) | | | | | | | | | |
| EM1900531-001 | CPT002_BH101_0.0 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900531-020 | QC152_160119 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2147780) | | | | | | | | | |
| EM1900529-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900531-002 | CPT002_BH101_0.5 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2148151) | | | | | | | | | |
| EM1900529-001 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900531-002 | CPT002_BH101_0.5 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2143628) | | | | | | | | | |
| EM1900529-001 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 130 | 130 | 0.00 | No Limit |
| EM1900531-002 | CPT002_BH101_0.5 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 120 | 130 | 9.68 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2145461) | | | | | | | | | |
| EM1900529-001 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900531-007 | CPT001_BH111_0.0 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2143429) | | | | | | | | | |
| EM1900529-001 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|----------------------|---------------------------------------|----------------------|-----------------------------------|---------|-----------------|------------------|----------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2143429) - continued | | | | | | | | | |
| EM1900529-001 | Anonymous | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EM1900531-007 | CPT001_BH111_0.0 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | |
| EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | | mg/kg | 1.9 | 2.2 | 16.2 | No Limit | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | | mg/kg | 0.8 | 0.9 | 17.6 | No Limit | |
| EP074H: Naphthalene (QC Lot: 2143429) | | | | | | | | | |
| EM1900529-001 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900531-007 | CPT001_BH111_0.0 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2143429) | | | | | | | | | |
| EM1900529-001 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| | | EM1900531-007 | CPT001_BH111_0.0 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2143429) - continued | | | | | | | | | |
| EM1900531-007 | CPT001_BH111_0.0 | EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2145459) | | | | | | | | | |
| EM1900529-001 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1900531-007 | CPT001_BH111_0.0 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2145459) | | | | | | | | | |
| EM1900529-001 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2145459) - continued | | | | | | | | | |
| EM1900529-001 | Anonymous | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900531-007 | CPT001_BH111_0.0 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2145459) | | | | | | | | | |
| EM1900529-001 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| EM1900531-007 | CPT001_BH111_0.0 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2145459) - continued | | | | | | | | | |
| EM1900531-007 | CPT001_BH111_0.0 | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenzo(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2145459) | | | | | | | | | |
| EM1900529-001 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900531-007 | CPT001_BH111_0.0 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|-------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2145459) - continued | | | | | | | | | |
| EM1900531-007 | CPT001_BH111_0.0 | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit | | |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2143429) | | | | | | | | | |
| EM1900529-001 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900531-007 | CPT001_BH111_0.0 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2145460) | | | | | | | | | |
| EM1900529-001 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900531-007 | CPT001_BH111_0.0 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2143429) | | | | | | | | | |
| EM1900529-001 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900531-007 | CPT001_BH111_0.0 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2145460) | | | | | | | | | |
| EM1900529-001 | Anonymous | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900531-007 | CPT001_BH111_0.0 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2149951) | | | | | | | | | |
| EM1900531-001 | CPT002_BH101_0.0 | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | 0.0003 | 0.0003 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2149951) - continued | | | | | | | | | |
| EM1900531-001 | CPT002_BH101_0.0 | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2149951) | | | | | | | | | |
| EM1900531-001 | CPT002_BH101_0.0 | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTeDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | 0.00 | No Limit |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2149951) | | | | | | | | | |
| EM1900531-001 | CPT002_BH101_0.0 | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2149951) | | | | | | | | | |
| EM1900531-001 | CPT002_BH101_0.0 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2145535) | | | | | | | | | |
| EM1900596-005 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 6.49 | 7.57 | 15.4 | 0% - 20% |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---------------------------------|------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2145535) - continued | | | | | | | | | |
| EM1900609-005 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.51 | 7.42 | 1.20 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2143472) | | | | | | | | | |
| EM1900572-003 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.004 | 0.004 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.001 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 0.022 | 0.022 | 0.00 | 0% - 20% |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.092 | 0.089 | 3.04 | 0% - 20% |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.052 | 0.048 | 7.95 | 0% - 50% |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900072-001 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.005 | 0.005 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.011 | 0.012 | 0.00 | 0% - 50% |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2143475) | | | | | | | | | |
| EM1900529-025 | Anonymous | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2143474) | | | | | | | | | |
| EM1900610-005 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900072-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2144130) | | | | | | | | | |
| EM1900366-001 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2145894) | | | | | | | | | |
| EM1900072-001 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EM1900561-001 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2145536) | | | | | | | | | |
| EM1900533-002 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900596-005 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.3 | 0.3 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|-------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|----------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2145257) - continued | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2145256) | | | | | | | | | |
| EM1900632-037 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900594-029 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2145256) | | | | | | | | | |
| EM1900632-037 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900594-029 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2145256) | | | | | | | | | |
| EM1900632-037 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EM1900594-029 | Anonymous | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | EP080: Napthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2149823) | | | | | | | | | |
| EM1900531-021 | QC352_160119 | EP231X-LL: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2149823) | | | | | | | | | |
| EM1900531-021 | QC352_160119 | EP231X-LL: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2149823) | | | | | | | | | |
| EM1900531-021 | QC352_160119 | EP231X-LL: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |

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 Work Order : EM1900531
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|-------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2149823) | | | | | | | | | |
| EM1900531-021 | QC352_160119 | EP231X-LL: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|-------|-------------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA033-A: Actual Acidity (QCLot: 2151277) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 100 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 89.8 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2151277) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 95.9 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES (QCLot: 2143602) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 96.0 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 89.5 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 92.8 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 93.4 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 112 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 99.4 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 97.7 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 83.5 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 110 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 100 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2143601) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 80.4 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2147780) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 79.7 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148151) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 92.5 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2143628) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 103 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2145461) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 113 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2143429) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 73.3 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 80.1 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 74.8 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 74.9 | 66 | 115 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2143429) - continued | | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 78.5 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 75.5 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2143429) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 93.5 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2143429) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 59.7 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 70.1 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 81.9 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 75.7 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 78.8 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.1 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 69.6 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 68.4 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 81.6 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 72.2 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 92.7 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 75.3 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 72.6 | 71 | 118 |
| EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 84.0 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.4 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 78.9 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 70.2 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 78.2 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 79.4 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2145459) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 97.5 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 111 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 110 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 115 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 103 | 65 | 124 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 106 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 108 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2145459) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 102 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 107 | 65 | 126 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2145459) - continued | | | | | | | | |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 104 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 108 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 100 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 97.8 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 109 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 97.7 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 106 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 69.1 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2145459) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 109 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 104 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 114 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 112 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 57.0 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 113 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 127 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 120 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 87.2 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 130 | 72 | 134 |
| EP075-EM: Dibenzo(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 134 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 132 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2145459) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 92.3 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 109 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 111 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 93.4 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 102 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 103 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 98.9 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 101 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 100 | 64 | 137 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 107 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 103 | 72 | 132 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|--------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2145459) - continued | | | | | | | | |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 88.2 | 42 | 160 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | # 43.4 | 55 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 113 | 73 | 132 |
| EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 122 | 75 | 134 |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 73 | 133 |
| EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 127 | 67 | 133 |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 89.9 | 67 | 135 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2143429) | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 83.6 | 63 | 122 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145460) | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 111 | 70 | 120 |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 112 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 110 | 77 | 117 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2143429) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 81.7 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ----- | ----- | ----- | ----- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145460) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 109 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 112 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 112 | 68 | 124 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2149951) | | | | | | | | |
| EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 83.2 | 57 | 121 |
| EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 68.0 | 55 | 125 |
| EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 86.8 | 52 | 126 |
| EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 76.8 | 54 | 123 |
| EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 84.8 | 55 | 127 |
| EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 114 | 54 | 125 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2149951) | | | | | | | | |
| EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | 0.00625 mg/kg | 59.9 | 52 | 128 |
| EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 80.8 | 54 | 129 |
| EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 101 | 58 | 127 |
| EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 97.6 | 57 | 128 |
| EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 90.8 | 60 | 134 |
| EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 93.6 | 63 | 130 |
| EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 66.8 | 55 | 130 |
| EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 98.0 | 62 | 130 |
| EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 72.0 | 53 | 134 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|--------|-------|-----------------------------|---------------------------------------|---------------------------|--------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
LowHigh | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2149951) - continued | | | | | | | | |
| EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 64.8 | 49 | 129 |
| EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 86.5 | 59 | 129 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2149951) | | | | | | | | |
| EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 73.6 | 52 | 132 |
| EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 74.0 | 65 | 126 |
| EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 70.0 | 64 | 126 |
| EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 69.7 | 63 | 124 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 64.7 | 58 | 125 |
| EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 94.0 | 61 | 130 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 104 | 55 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2149951) | | | | | | | | |
| EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 97.6 | 54 | 130 |
| EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 82.4 | 61 | 130 |
| EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 85.6 | 62 | 130 |
| EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 62.0 | 60 | 130 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|--------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
LowHigh | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2143472) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.5 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 100 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 83 | 105 |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 103 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 97.6 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 100 | 83 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 102 | 85 | 109 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2143475) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 103 | 84 | 116 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2143474) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 93.9 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2144130) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 106 | 92 | 111 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145894) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 92.3 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2145536) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 95.8 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2147080) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 119 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2145257) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 102 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2145257) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 104 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 92.6 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 104 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 77.3 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 82.4 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 76.4 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 70.7 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 85.4 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 93.9 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 98.8 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 98.7 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 87.6 | 76 | 112 |
| EP074: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 103 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 112 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2145257) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 101 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 101 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 97.9 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 109 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2145257) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 83.2 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147079) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 104 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 106 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 102 | 53 | 117 |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 102 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 102 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 101 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 101 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 101 | 56 | 120 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147079) - continued | | | | | | | | |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 100.0 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 103 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2
205-82-3 | 1 | µg/L | <1.0 | 5 µg/L | 115 | 56 | 131 |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 118 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 117 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 109 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 111 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 111 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2146988) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 93.8 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 107 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 120 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 109 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 124 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 124 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 20 µg/L | 116 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 2 | µg/L | <2 | 30 µg/L | 117 | 53 | 125 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 121 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2146988) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 4 | µg/L | <4 | 10 µg/L | 44.7 | 18 | 51 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | 10 µg/L | 90.2 | 49 | 106 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | 20 µg/L | 83.0 | 41 | 91 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | 10 µg/L | 112 | 48 | 120 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | 10 µg/L | 104 | 47 | 128 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | 60 µg/L | 102 | 41 | 130 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | 60 µg/L | 42.7 | 19 | 49 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | 60 µg/L | 93.2 | 47 | 126 |
| EP075-EM: Dinoseb | 88-85-7 | 50 | µg/L | <50 | 60 µg/L | 118 | 49 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | 50 µg/L | 125 | 61 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2146988) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 10 µg/L | 115 | 57 | 126 |
| EP075-EM: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 123 | 62 | 134 |
| EP075-EM: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 108 | 58 | 133 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 116 | 60 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 114 | 59 | 132 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 124 | 61 | 137 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|----------------------|-------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2146988) - continued | | | | | | | | |
| EP075-EM: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 10 µg/L | 114 | 59 | 130 |
| EP075-EM: 4.4`-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 135 | 59 | 135 |
| EP075-EM: 4.4`-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | 10 µg/L | # 140 | 59 | 128 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145256) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 106 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147076) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 81.8 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 89.6 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 89.8 | 55 | 130 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145256) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 109 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2147076) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 90.2 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 89.6 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 88.6 | 53 | 136 |
| EP080: BTEXN (QCLot: 2145256) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 108 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 108 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 110 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | 40 µg/L | 107 | 72 | 129 |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 106 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 103 | 70 | 125 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2149823) | | | | | | | | |
| EP231X-LL: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 112 | 50 | 130 |
| EP231X-LL: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 99.6 | 50 | 130 |
| EP231X-LL: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 103 | 50 | 130 |
| EP231X-LL: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 102 | 50 | 130 |
| EP231X-LL: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 99.6 | 50 | 130 |
| EP231X-LL: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 54.6 | 40 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2149823) | | | | | | | | |
| EP231X-LL: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.01 | µg/L | <0.01 | 0.25 µg/L | 93.6 | 50 | 130 |
| EP231X-LL: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 92.0 | 50 | 130 |
| EP231X-LL: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 117 | 50 | 130 |
| EP231X-LL: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 121 | 50 | 130 |
| EP231X-LL: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 106 | 50 | 130 |
| EP231X-LL: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 89.8 | 50 | 130 |
| EP231X-LL: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 79.2 | 50 | 130 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB) Report | Laboratory Control Spike (LCS) Report | | | |
|---|-------------|-------|--------|--------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2149823) - continued | | | | | | | | |
| EP231X-LL: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 59.8 | 40 | 130 |
| EP231X-LL: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 59.8 | 40 | 130 |
| EP231X-LL: Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 62.6 | 40 | 130 |
| EP231X-LL: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 75.0 | 40 | 130 |
| EP231X-LL: Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 79.8 | 50 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2149823) | | | | | | | | |
| EP231X-LL: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 89.2 | 40 | 130 |
| EP231X-LL: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 59.6 | 40 | 130 |
| EP231X-LL: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 49.1 | 40 | 130 |
| EP231X-LL: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 60.5 | 50 | 130 |
| EP231X-LL: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 51.6 | 40 | 130 |
| EP231X-LL: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 56.4 | 50 | 130 |
| EP231X-LL: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 54.4 | 40 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2149823) | | | | | | | | |
| EP231X-LL: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 105 | 50 | 130 |
| EP231X-LL: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 129 | 50 | 130 |
| EP231X-LL: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 115 | 50 | 130 |
| EP231X-LL: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 69.4 | 50 | 130 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| Laboratory sample ID | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------|-----------|--------------------------|-------------------|---------------------|------|
| | | | | Spike Concentration | Spike Recovery(%) | Recovery Limits (%) | |
| | | | | | MS | Low | High |
| Client sample ID | Method: Compound | CAS Number | | | | | |
| EG005T: Total Metals by ICP-AES (QCLot: 2143602) | | | | | | | |
| EM1900531-002 | CPT002_BH101_0.5 | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 92.4 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 93.7 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 96.4 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 96.6 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 82.4 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 96.3 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 83.7 | 71 | 125 |



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2143602) - continued | | | | | | | |
| EM1900531-002 | CPT002_BH101_0.5 | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 94.0 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2143601) | | | | | | | |
| EM1900531-002 | CPT002_BH101_0.5 | EG035T: Mercury | 7439-97-6 | 5 mg/kg | # 73.3 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2147780) | | | | | | | |
| EM1900529-003 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | 94.6 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148151) | | | | | | | |
| EM1900529-003 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 101 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2143628) | | | | | | | |
| EM1900529-003 | Anonymous | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 102 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2145461) | | | | | | | |
| EM1900529-009 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 112 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2143429) | | | | | | | |
| EM1900529-003 | Anonymous | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 70.4 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 75.3 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2143429) | | | | | | | |
| EM1900529-003 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 70.1 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 69.8 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 76.2 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2145459) | | | | | | | |
| EM1900529-003 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 95.5 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 111 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 70.2 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2145459) | | | | | | | |
| EM1900529-003 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 102 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 94.8 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2145459) | | | | | | | |
| EM1900529-003 | Anonymous | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 109 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 115 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2143429) | | | | | | | |
| EM1900529-003 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 63.3 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145460) | | | | | | | |
| EM1900529-007 | Anonymous | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 98.1 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 99.9 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 98.3 | 64 | 118 |

Matrix Spike (MS) Report

| <i>Spike</i> | <i>SpikeRecovery(%)</i> | <i>Recovery Limits (%)</i> | |
|----------------------|-------------------------|----------------------------|-------------|
| <i>Concentration</i> | <i>MS</i> | <i>Low</i> | <i>High</i> |

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|-------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2149951) - continued | | | | | | | |
| EM1900531-001 | CPT002_BH101_0.0 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.00125 mg/kg | 110 | 50 | 130 |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.00125 mg/kg | 104 | 50 | 130 |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.00125 mg/kg | 106 | 50 | 130 |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.00125 mg/kg | 72.8 | 50 | 130 |
| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2143472) | | | | | | | |
| EM1900072-001 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 93.3 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 95.2 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 91.7 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 79.5 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 97.4 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 97.6 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2143474) | | | | | | | |
| EM1900072-003 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 74.8 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2144130) | | | | | | | |
| EM1900529-025 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 102 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145894) | | | | | | | |
| EM1900072-003 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 102 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2145536) | | | | | | | |
| EM1900596-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 92.6 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2145257) | | | | | | | |
| EM1900529-025 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 111 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 89.4 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2145257) | | | | | | | |
| EM1900529-025 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 99.8 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145256) | | | | | | | |
| EM1900529-025 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 83.9 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145256) | | | | | | | |
| EM1900529-025 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 83.9 | 44 | 122 |
| EP080: BTEXN (QCLot: 2145256) | | | | | | | |
| EM1900529-025 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 103 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 105 | 72 | 132 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2149823) | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--|-------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2149823) - continued | | | | | | | |
| EM1900531-022 | QC452_160119 | EP231X-LL: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.05 µg/L | 128 | 50 | 130 |
| | | EP231X-LL: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.05 µg/L | 121 | 50 | 130 |
| | | EP231X-LL: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.05 µg/L | 116 | 50 | 130 |
| | | EP231X-LL: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.05 µg/L | 119 | 50 | 130 |
| | | EP231X-LL: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.05 µg/L | 113 | 50 | 130 |
| | | EP231X-LL: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.05 µg/L | 64.6 | 30 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2149823) | | | | | | | |
| EM1900531-022 | QC452_160119 | EP231X-LL: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.25 µg/L | 102 | 30 | 130 |
| | | EP231X-LL: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.05 µg/L | 95.0 | 50 | 130 |
| | | EP231X-LL: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.05 µg/L | 128 | 50 | 130 |
| | | EP231X-LL: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.05 µg/L | 125 | 50 | 130 |
| | | EP231X-LL: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.05 µg/L | 115 | 50 | 130 |
| | | EP231X-LL: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.05 µg/L | 106 | 50 | 130 |
| | | EP231X-LL: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.05 µg/L | 93.0 | 50 | 130 |
| | | EP231X-LL: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.05 µg/L | 73.8 | 30 | 130 |
| | | EP231X-LL: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.05 µg/L | 77.0 | 30 | 130 |
| | | EP231X-LL: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.05 µg/L | 66.2 | 30 | 130 |
| | | EP231X-LL: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.125 µg/L | 79.7 | 30 | 130 |
| | | EP231X-LL: Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.05 µg/L | 102 | 30 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2149823) | | | | | | | |
| EM1900531-022 | QC452_160119 | EP231X-LL: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.05 µg/L | 115 | 30 | 130 |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.125 µg/L | 54.4 | 30 | 130 |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.125 µg/L | 44.6 | 30 | 130 |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.125 µg/L | 59.6 | 30 | 130 |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.125 µg/L | 62.1 | 30 | 130 |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.05 µg/L | 61.4 | 30 | 130 |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.05 µg/L | 54.0 | 30 | 130 |
| | | EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2149823) | | | | | |
| EM1900531-022 | QC452_160119 | EP231X-LL: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 µg/L | 127 | 50 | 130 |
| | | EP231X-LL: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 µg/L | 116 | 50 | 130 |
| | | EP231X-LL: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 µg/L | 117 | 50 | 130 |
| | | EP231X-LL: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 µg/L | 98.0 | 50 | 130 |



QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1900531**

Page : 1 of 18

Client : **AECOM Australia Pty Ltd**
Contact : **[REDACTED]**
Project : **60592634**
Site : **----**
Sampler : **[REDACTED]**
Order number :

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 16-Jan-2019
Issue Date : 24-Jan-2019
No. of samples received : 30
No. of samples analysed : 19

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|---------|------------|--------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2145459-001 | ---- | Endrin | 72-20-8 | 43.4 % | 55-148% | Recovery less than lower control limit |
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | EM1900531--002 | CPT002_BH101_0.5 | Mercury | 7439-97-6 | 73.3 % | 76-116% | Recovery less than lower data quality objective |

Matrix: **WATER**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|----------|------------|-------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2146988-001 | ---- | 4,4'-DDT | 50-29-3 | 140 % | 59-128% | Recovery greater than upper control limit |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| Container / Client Sample ID(s) | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
QC352_160119 | ---- | ---- | ---- | 21-Jan-2019 | 16-Jan-2019 | 5 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 3 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 2 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 6 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 20 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 3 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 2 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 6 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 20 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|--|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001)
CPT002_BH101_0.0, | CPT002_BH101_0.5 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 22-Jan-2019 | 22-Jan-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EA001)
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
CPT051A_BH18_0.0,
CPT051A_BH18_0.5 | CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0,
QC152_160119, | 16-Jan-2019 | 23-Jan-2019 | 23-Jan-2019 | ✓ | 23-Jan-2019 | 23-Jan-2019 | ✓ |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.5, | CPT002_BH101_1.5,
CPT001_BH111_1.5,
CPT001_BH110_1.5 | 16-Jan-2019 | 24-Jan-2019 | 16-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.5, | CPT002_BH101_1.5,
CPT001_BH111_1.5,
CPT001_BH110_1.5 | 16-Jan-2019 | 24-Jan-2019 | 16-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.5, | CPT002_BH101_1.5,
CPT001_BH111_1.5,
CPT001_BH110_1.5 | 16-Jan-2019 | 24-Jan-2019 | 16-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.5, | CPT002_BH101_1.5,
CPT001_BH111_1.5,
CPT001_BH110_1.5 | 16-Jan-2019 | 24-Jan-2019 | 16-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.5, | CPT002_BH101_1.5,
CPT001_BH111_1.5,
CPT001_BH110_1.5 | 16-Jan-2019 | 24-Jan-2019 | 16-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|---|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
CPT051A_BH18_0.0,
CPT051A_BH18_0.5 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0,
QC152_160119, | 16-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 30-Jan-2019 | ✓ |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
CPT051A_BH18_0.0,
CPT051A_BH18_0.5 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0,
QC152_160119, | 16-Jan-2019 | 22-Jan-2019 | 15-Jul-2019 | ✓ | 22-Jan-2019 | 15-Jul-2019 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
CPT051A_BH18_0.0,
CPT051A_BH18_0.5 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0,
QC152_160119, | 16-Jan-2019 | 22-Jan-2019 | 13-Feb-2019 | ✓ | 24-Jan-2019 | 13-Feb-2019 | ✓ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
CPT051A_BH18_0.0,
CPT051A_BH18_0.5 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0,
QC152_160119, | 16-Jan-2019 | 22-Jan-2019 | 13-Feb-2019 | ✓ | 23-Jan-2019 | 29-Jan-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
CPT051A_BH18_0.0,
CPT051A_BH18_0.5 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0,
QC152_160119, | 16-Jan-2019 | 22-Jan-2019 | 30-Jan-2019 | ✓ | 23-Jan-2019 | 05-Feb-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T) | | 16-Jan-2019 | 22-Jan-2019 | 13-Feb-2019 | ✔ | 23-Jan-2019 | 13-Feb-2019 | ✔ |
| CPT002_BH101_0.0, | CPT002_BH101_0.5, | | | | | | | |
| CPT001_BH111_0.0, | CPT001_BH111_0.5, | | | | | | | |
| CPT001_BH111_1.0, | CPT001_BH110_0.0, | | | | | | | |
| CPT001_BH110_0.5, | CPT001_BH110_1.0, | | | | | | | |
| CPT051A_BH18_0.0, | QC152_160119, | | | | | | | |
| CPT051A_BH18_0.5 | | | | | | | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM) | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✔ | 22-Jan-2019 | 02-Mar-2019 | ✔ |
| CPT002_BH101_0.0, | CPT002_BH101_0.5, | | | | | | | |
| CPT001_BH111_0.0, | CPT001_BH111_0.5, | | | | | | | |
| CPT001_BH111_1.0, | CPT001_BH110_0.0, | | | | | | | |
| CPT001_BH110_0.5, | CPT001_BH110_1.0, | | | | | | | |
| CPT051A_BH18_0.0, | QC152_160119, | | | | | | | |
| CPT051A_BH18_0.5 | | | | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 16-Jan-2019 | 18-Jan-2019 | 23-Jan-2019 | ✔ | 21-Jan-2019 | 23-Jan-2019 | ✔ |
| CPT002_BH101_0.0, | CPT002_BH101_0.5, | | | | | | | |
| CPT001_BH111_0.0, | CPT001_BH111_0.5, | | | | | | | |
| CPT001_BH111_1.0, | CPT001_BH110_0.0, | | | | | | | |
| CPT001_BH110_0.5, | CPT001_BH110_1.0, | | | | | | | |
| CPT051A_BH18_0.0, | QC152_160119, | | | | | | | |
| CPT051A_BH18_0.5 | | | | | | | | |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 16-Jan-2019 | 18-Jan-2019 | 23-Jan-2019 | ✔ | 21-Jan-2019 | 23-Jan-2019 | ✔ |
| CPT002_BH101_0.0, | CPT002_BH101_0.5, | | | | | | | |
| CPT001_BH111_0.0, | CPT001_BH111_0.5, | | | | | | | |
| CPT001_BH111_1.0, | CPT001_BH110_0.0, | | | | | | | |
| CPT001_BH110_0.5, | CPT001_BH110_1.0, | | | | | | | |
| CPT051A_BH18_0.0, | QC152_160119, | | | | | | | |
| CPT051A_BH18_0.5 | | | | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 16-Jan-2019 | 18-Jan-2019 | 23-Jan-2019 | ✔ | 21-Jan-2019 | 23-Jan-2019 | ✔ |
| CPT002_BH101_0.0, | CPT002_BH101_0.5, | | | | | | | |
| CPT001_BH111_0.0, | CPT001_BH111_0.5, | | | | | | | |
| CPT001_BH111_1.0, | CPT001_BH110_0.0, | | | | | | | |
| CPT001_BH110_0.5, | CPT001_BH110_1.0, | | | | | | | |
| CPT051A_BH18_0.0, | QC152_160119, | | | | | | | |
| CPT051A_BH18_0.5 | | | | | | | | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| CPT002_BH101_0.0, | CPT002_BH101_0.5, | | | | | | | |
| CPT001_BH111_0.0, | CPT001_BH111_0.5, | | | | | | | |
| CPT001_BH111_1.0, | CPT001_BH110_0.0, | | | | | | | |
| CPT001_BH110_0.5, | CPT001_BH110_1.0, | | | | | | | |
| CPT051A_BH18_0.0, | QC152_160119, | | | | | | | |
| CPT051A_BH18_0.5 | | | | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| CPT002_BH101_0.0, | CPT002_BH101_0.5, | | | | | | | |
| CPT001_BH111_0.0, | CPT001_BH111_0.5, | | | | | | | |
| CPT001_BH111_1.0, | CPT001_BH110_0.0, | | | | | | | |
| CPT001_BH110_0.5, | CPT001_BH110_1.0, | | | | | | | |
| CPT051A_BH18_0.0, | QC152_160119, | | | | | | | |
| CPT051A_BH18_0.5 | | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| CPT002_BH101_0.0, | CPT002_BH101_0.5, | | | | | | | |
| CPT001_BH111_0.0, | CPT001_BH111_0.5, | | | | | | | |
| CPT001_BH111_1.0, | CPT001_BH110_0.0, | | | | | | | |
| CPT001_BH110_0.5, | CPT001_BH110_1.0, | | | | | | | |
| CPT051A_BH18_0.0, | QC152_160119, | | | | | | | |
| CPT051A_BH18_0.5 | | | | | | | | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| CPT002_BH101_0.0, | CPT002_BH101_0.5, | | | | | | | |
| CPT001_BH111_0.0, | CPT001_BH111_0.5, | | | | | | | |
| CPT001_BH111_1.0, | CPT001_BH110_0.0, | | | | | | | |
| CPT001_BH110_0.5, | CPT001_BH110_1.0, | | | | | | | |
| CPT051A_BH18_0.0, | QC152_160119, | | | | | | | |
| CPT051A_BH18_0.5 | | | | | | | | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
CPT051A_BH18_0.0,
CPT051A_BH18_0.5 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0,
QC152_160119, | 16-Jan-2019 | 18-Jan-2019 | 23-Jan-2019 | ✓ | 21-Jan-2019 | 23-Jan-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
CPT051A_BH18_0.0,
CPT051A_BH18_0.5 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0,
QC152_160119, | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
CPT051A_BH18_0.0,
CPT051A_BH18_0.5 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0,
QC152_160119, | 16-Jan-2019 | 18-Jan-2019 | 23-Jan-2019 | ✓ | 21-Jan-2019 | 23-Jan-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
CPT051A_BH18_0.0,
CPT051A_BH18_0.5 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0,
QC152_160119, | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 22-Jan-2019 | 02-Mar-2019 | ✓ |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
QC152_160119 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0, | 16-Jan-2019 | 23-Jan-2019 | 15-Jul-2019 | ✓ | 24-Jan-2019 | 04-Mar-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
QC152_160119 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0, | 16-Jan-2019 | 23-Jan-2019 | 15-Jul-2019 | ✔ | 24-Jan-2019 | 04-Mar-2019 | ✔ |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
QC152_160119 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0, | 16-Jan-2019 | 23-Jan-2019 | 15-Jul-2019 | ✔ | 24-Jan-2019 | 04-Mar-2019 | ✔ |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
QC152_160119 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0, | 16-Jan-2019 | 23-Jan-2019 | 15-Jul-2019 | ✔ | 24-Jan-2019 | 04-Mar-2019 | ✔ |
| EP231P: PFAS Sums | | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT002_BH101_0.0,
CPT001_BH111_0.0,
CPT001_BH111_1.0,
CPT001_BH110_0.5,
QC152_160119 | CPT002_BH101_0.5,
CPT001_BH111_0.5,
CPT001_BH110_0.0,
CPT001_BH110_1.0, | 16-Jan-2019 | 23-Jan-2019 | 15-Jul-2019 | ✔ | 24-Jan-2019 | 04-Mar-2019 | ✔ |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
QC352_160119 | 16-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 16-Jan-2019 | ✖ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Natural (EG020B-F)
QC352_160119 | 16-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 15-Jul-2019 | ✔ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Natural (EG035F)
QC352_160119 | 16-Jan-2019 | ---- | ---- | ---- | 23-Jan-2019 | 13-Feb-2019 | ✔ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Opaque plastic bottle - NaOH (EG050F)
QC352_160119 | 16-Jan-2019 | ---- | ---- | ---- | 18-Jan-2019 | 13-Feb-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| Opaque plastic bottle - NaOH (EK026SF)
QC352_160119 | 16-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
QC352_160119 | 16-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 13-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
QC352_160119 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 22-Jan-2019 | 03-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC352_160119 | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC352_160119 | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC352_160119 | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC352_160119 | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
QC352_160119 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 22-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC352_160119 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC352_160119 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC352_160119 | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC352_160119 | | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 22-Jan-2019 | 03-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC352_160119, QC452_160119,
QC554_160119, QC555_160119,
QC556_160119 | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC352_160119 | | 16-Jan-2019 | 22-Jan-2019 | 23-Jan-2019 | ✓ | 22-Jan-2019 | 03-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC352_160119, QC452_160119,
QC554_160119, QC555_160119,
QC556_160119 | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP080: BTEXN | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC352_160119, QC452_160119,
QC554_160119, QC555_160119,
QC556_160119 | | 16-Jan-2019 | 21-Jan-2019 | 30-Jan-2019 | ✓ | 21-Jan-2019 | 30-Jan-2019 | ✓ |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL)
QC352_160119, QC452_160119,
QC554_160119, QC555_160119,
QC556_160119 | | 16-Jan-2019 | 23-Jan-2019 | 15-Jul-2019 | ✓ | 23-Jan-2019 | 15-Jul-2019 | ✓ |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL)
QC352_160119, QC452_160119,
QC554_160119, QC555_160119,
QC556_160119 | | 16-Jan-2019 | 23-Jan-2019 | 15-Jul-2019 | ✓ | 23-Jan-2019 | 15-Jul-2019 | ✓ |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL)
QC352_160119, QC452_160119,
QC554_160119, QC555_160119,
QC556_160119 | | 16-Jan-2019 | 23-Jan-2019 | 15-Jul-2019 | ✓ | 23-Jan-2019 | 15-Jul-2019 | ✓ |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL)
QC352_160119, QC452_160119,
QC554_160119, QC555_160119,
QC556_160119 | | 16-Jan-2019 | 23-Jan-2019 | 15-Jul-2019 | ✓ | 23-Jan-2019 | 15-Jul-2019 | ✓ |



Matrix: WATER

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|--------------------------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP231P: PFAS Sums | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL) | | | | | | | | |
| QC352_160119,
QC554_160119,
QC556_160119 | QC452_160119,
QC555_160119, | 16-Jan-2019 | 23-Jan-2019 | 15-Jul-2019 | ✔ | 23-Jan-2019 | 15-Jul-2019 | ✔ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | Quality Control Specification | |
|---|----------|-------|---------|----------|----------|-------------------------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | | Evaluation |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 9 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | Method | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 9 | 11.11 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | Method | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 2 | 18 | 11.11 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 14 | 14.29 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 3 | 33.33 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 2 | 18 | 11.11 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 4 | 25.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 3 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS) | EP231X-LL | 1 | 5 | 20.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 2 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 6 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 20 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 18 | 11.11 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 14 | 7.14 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 3 | 33.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 3 | 33.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS) | EP231X-LL | 1 | 5 | 20.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS) | EP231X-LL | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 3 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS) | EP231X-LL | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 2 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 6 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 20 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|---|
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | SOIL | In-House. A portion of soil is extracted with MTBE. The extract is taken to dryness, made up in mobile phase. Analysis is by LC/MSMS, ESI Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1 |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using depheylcarbazine. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |

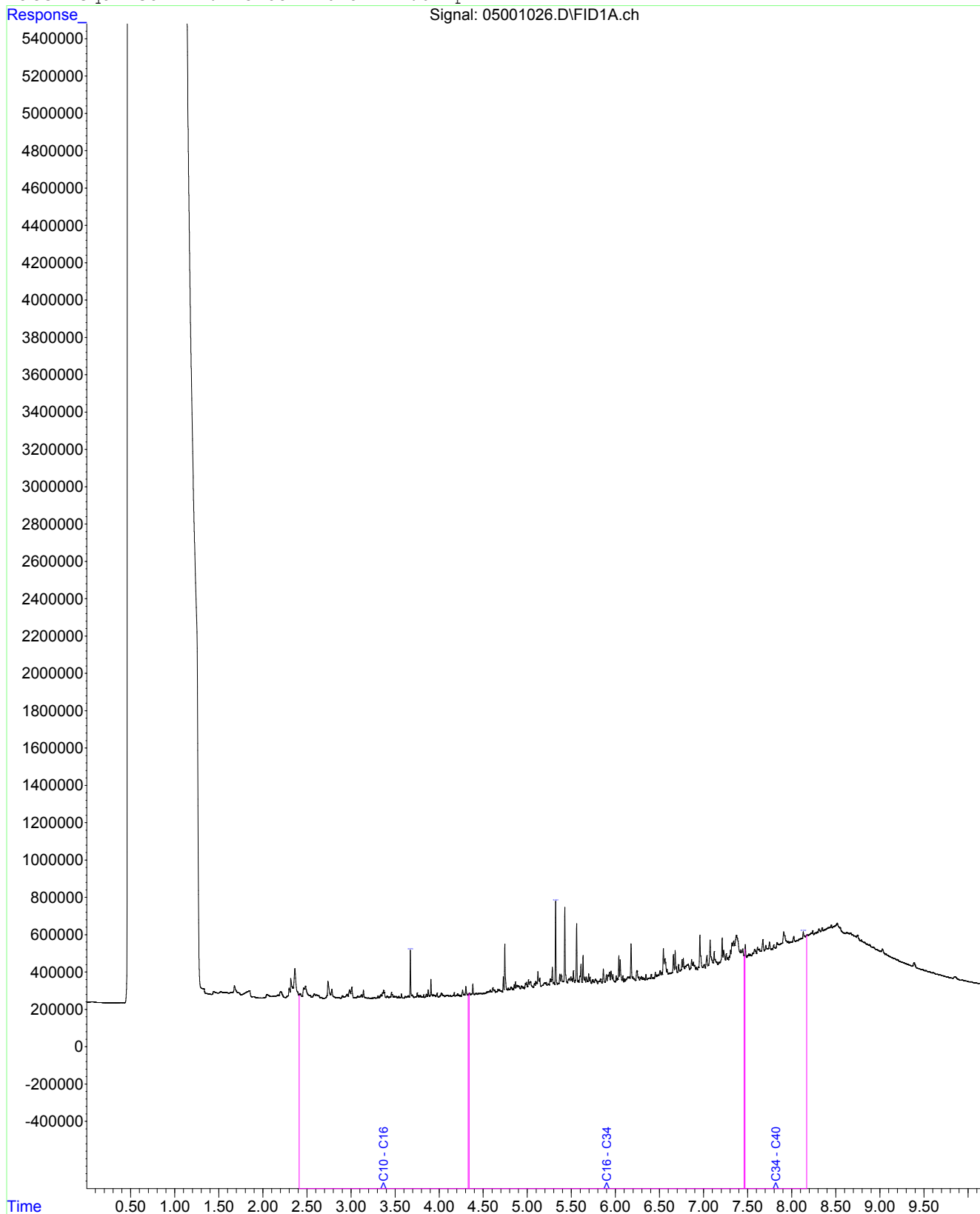


| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS) | EP231X-LL | WATER | In-house: Analysis of fresh and saline waters by solid phase extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1 |
| Preparation Methods | Method | Matrix | Method Descriptions |
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |

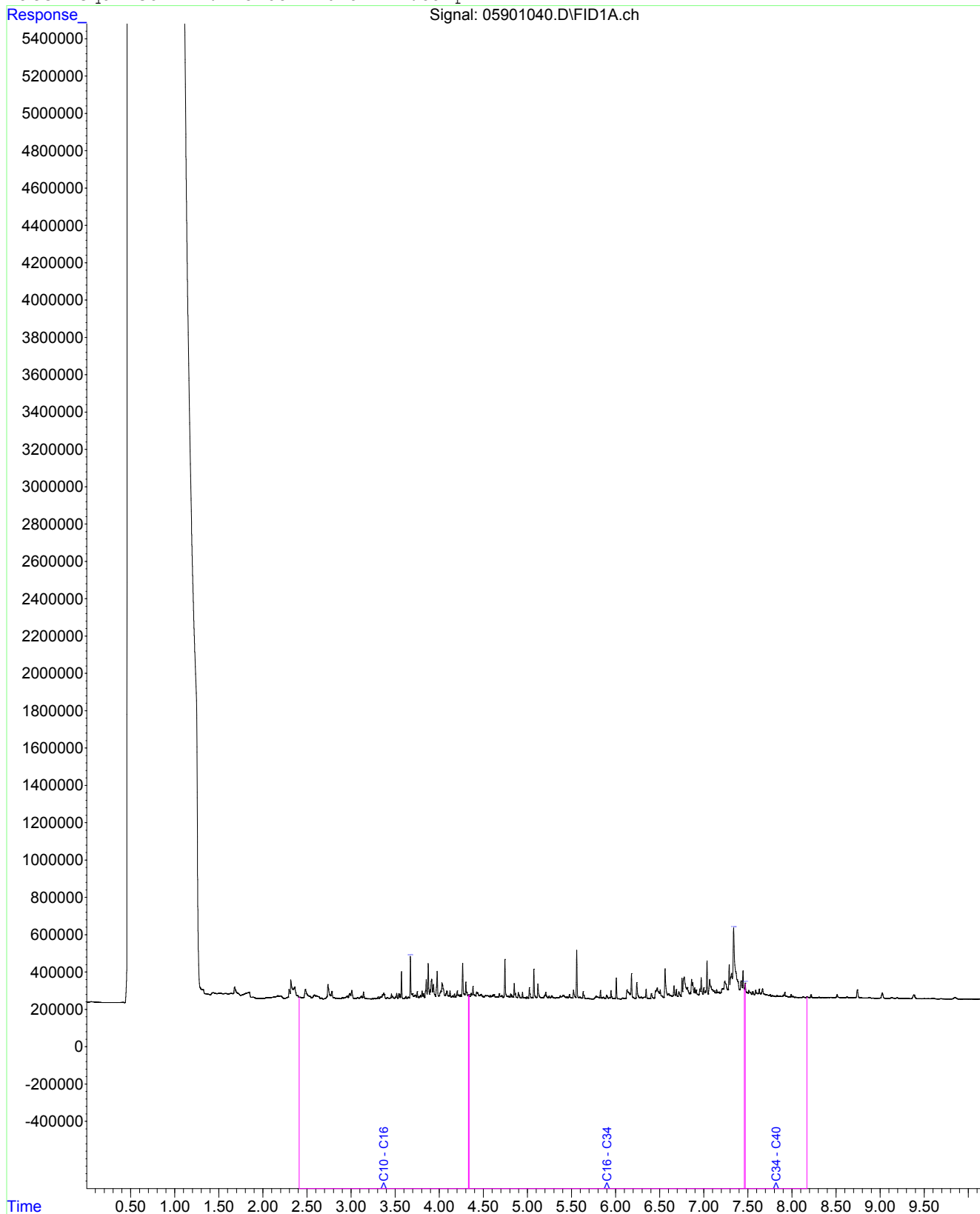


| Preparation Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Sample Extraction for PFAS | EP231-PR | SOIL | In house |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |
| SPE preparation for LL and saline PFCs | EP231-SPE | WATER | In house |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

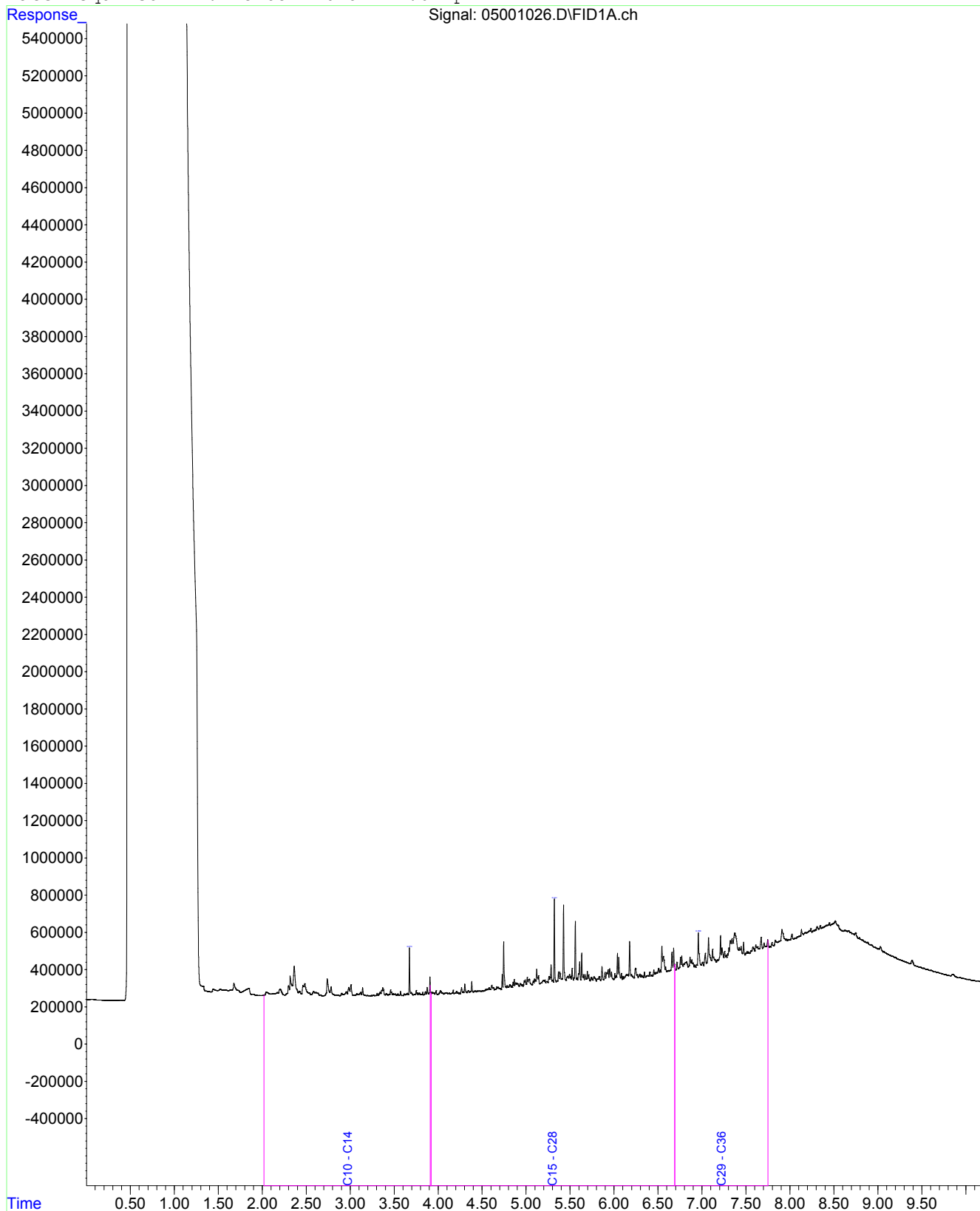
Fraction Scheme : NEPM Draft HIL
Data File : 05001026.D
Laboratory Number: EM1900531-001
Sample ID : CPT002_BH101_0.0
Date Acquired : 23 Jan 2019 4:01 pm



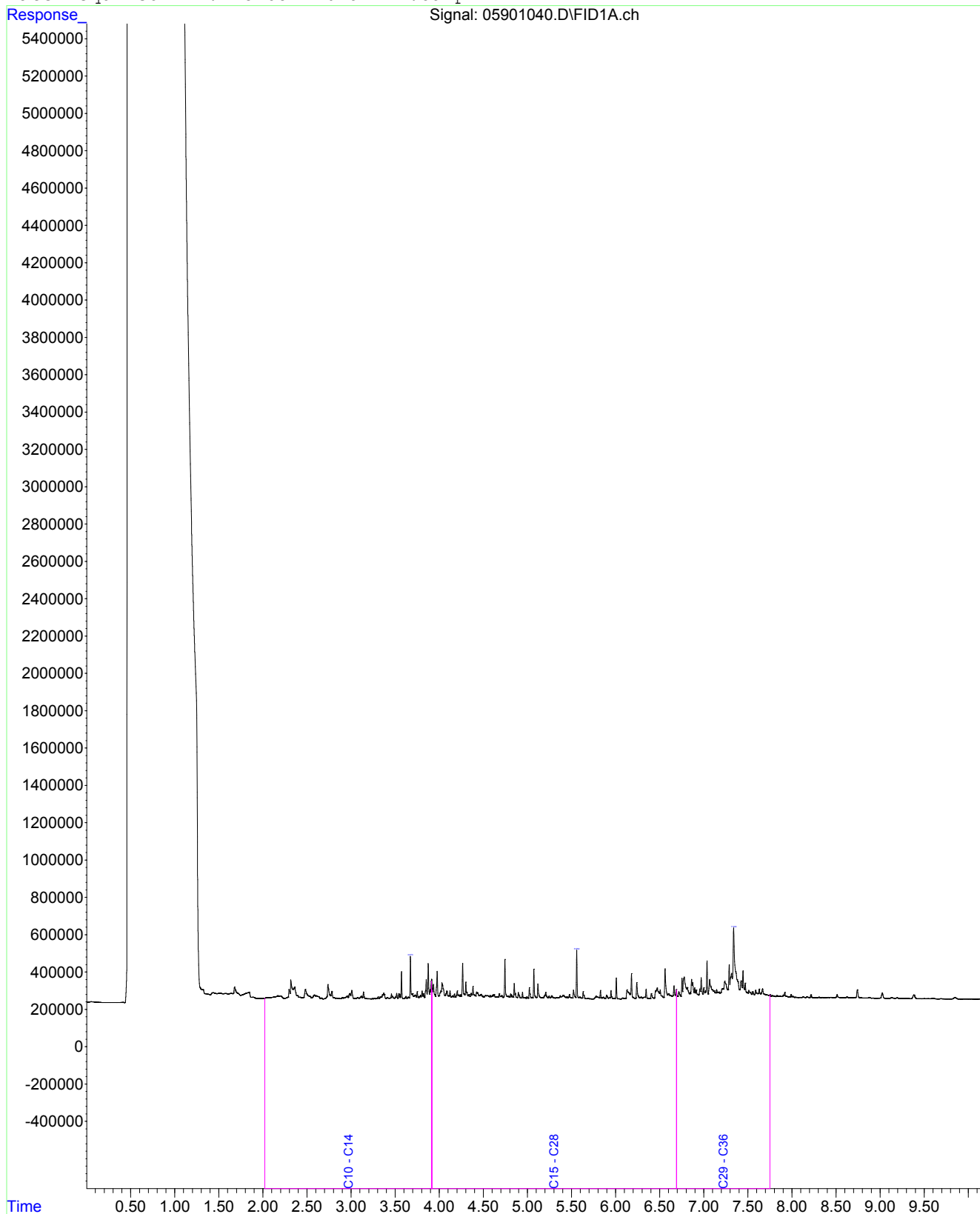
Fraction Scheme : NEPM Draft HIL
Data File : 05901040.D
Laboratory Number: EM1900531-019
Sample ID : CPT051A_BH18_0.0
Date Acquired : 23 Jan 2019 7:59 pm



Fraction Scheme : Standard
Data File : 05001026.D
Laboratory Number: EM1900531-001
Sample ID : CPT002_BH101_0.0
Date Acquired : 23 Jan 2019 4:01 pm



Fraction Scheme : Standard
Data File : 05901040.D
Laboratory Number: EM1900531-019
Sample ID : CPT051A_BH18_0.0
Date Acquired : 23 Jan 2019 7:59 pm



**ANZ
FQM - Generic Chain of Custody Form**

| CONSULTANT: Arccon | | ADDRESS / OFFICE: | | SAMPLER: S. McCulloch | Destination Laboratory | |
|--|-------------|--------------------------------------|----------|---|------------------------|---------------|
| PROJECT MANAGER (PM): [Redacted] | | SITE: GLUPP Groundwater Study | | MOBILE: [Redacted] | ALC | |
| PROJECT NUMBER & TASK CODE: 20542624 | | P.O. NO.: [Redacted] | | EMAIL REPORT TO: [Redacted] | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: EN/006/14 | | ANALYSIS REQUIRED INCLUDING SUTES (note - sulte codes must be listed to attract suite prices) | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | | |
| FOR LABORATORY USE ONLY: | | | | | | |
| COOLER SEAL (if applicable) Yes No N/A | | | | | | |
| SAMPLE TEMPERATURE CHILLED: Yes No | | | | | | |
| SAMPLE INFORMATION (Note: S = Soil W=Water) | | CONTAINER INFORMATION | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles |
| CPT091-BH22-190119-0.5 | 190119-1.0 | S | 19.01.19 | 1135 | 19.01.19 | 16 |
| CPT091-BH22-190119-1.0 | 190119-1.5 | | | 1140 | | |
| CPT091-BH22-190119-1.5 | 190119-2.0 | | | 1145 | | |
| CPT091-BH22-190119-2.0 | 190119-2.5 | | | 1150 | | |
| CPT091-BH22-190119-2.5 | 190119-3.0 | | | 1155 | | |
| CPT142-BH54-190119-0.2 | 190119-0.5 | | | 1340 | | 1519 |
| CPT142-BH54-190119-0.5 | 190119-1.0 | | | 1345 | | |
| CPT142-BH54-190119-1.0 | 190119-1.5 | S | | 1350 | | |
| CPT142-BH54-190119-1.5 | 190119-2.0 | W | | 1400 | | 85 |
| CPT142-BH54-190119-2.0 | 190119-2.5 | W | | | | 20 |
| CPT142-BH54-190119-2.5 | 190119-3.0 | W | | | | 10 |
| CPT142-BH54-190119-3.0 | 190119-3.5 | W | | | | 10 |
| CPT142-BH54-190119-3.5 | 190119-4.0 | W | | | | 10 |
| CPT142-BH54-190119-4.0 | 190119-4.5 | W | | | | |
| CPT142-BH54-190119-4.5 | 190119-5.0 | W | | | | |
| CPT142-BH54-190119-5.0 | 190119-5.5 | W | | | | |
| CPT142-BH54-190119-5.5 | 190119-6.0 | W | | | | |
| CPT142-BH54-190119-6.0 | 190119-6.5 | W | | | | |
| CPT142-BH54-190119-6.5 | 190119-7.0 | W | | | | |
| CPT142-BH54-190119-7.0 | 190119-7.5 | W | | | | |
| CPT142-BH54-190119-7.5 | 190119-8.0 | W | | | | |
| CPT142-BH54-190119-8.0 | 190119-8.5 | W | | | | |
| CPT142-BH54-190119-8.5 | 190119-9.0 | W | | | | |
| CPT142-BH54-190119-9.0 | 190119-9.5 | W | | | | |
| CPT142-BH54-190119-9.5 | 190119-10.0 | W | | | | |
| CPT142-BH54-190119-10.0 | 190119-10.5 | W | | | | |
| CPT142-BH54-190119-10.5 | 190119-11.0 | W | | | | |
| CPT142-BH54-190119-11.0 | 190119-11.5 | W | | | | |
| CPT142-BH54-190119-11.5 | 190119-12.0 | W | | | | |
| CPT142-BH54-190119-12.0 | 190119-12.5 | W | | | | |
| CPT142-BH54-190119-12.5 | 190119-13.0 | W | | | | |
| CPT142-BH54-190119-13.0 | 190119-13.5 | W | | | | |
| CPT142-BH54-190119-13.5 | 190119-14.0 | W | | | | |
| CPT142-BH54-190119-14.0 | 190119-14.5 | W | | | | |
| CPT142-BH54-190119-14.5 | 190119-15.0 | W | | | | |
| CPT142-BH54-190119-15.0 | 190119-15.5 | W | | | | |
| CPT142-BH54-190119-15.5 | 190119-16.0 | W | | | | |
| CPT142-BH54-190119-16.0 | 190119-16.5 | W | | | | |
| CPT142-BH54-190119-16.5 | 190119-17.0 | W | | | | |
| CPT142-BH54-190119-17.0 | 190119-17.5 | W | | | | |
| CPT142-BH54-190119-17.5 | 190119-18.0 | W | | | | |
| CPT142-BH54-190119-18.0 | 190119-18.5 | W | | | | |
| CPT142-BH54-190119-18.5 | 190119-19.0 | W | | | | |
| CPT142-BH54-190119-19.0 | 190119-19.5 | W | | | | |

COC Page of

Most freeze bags for acid sulfate analysis.

ANZ

FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|-------------------------|--|----------|--|-------------|---|--------------------------------|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: S. McCulloch | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: GLPP Groundwater Study | | MOBILE: | | ALC | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: EN/006/14 | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | HOLD | | Notes: e.g. Highly contaminated sample
e.g. "High PAHs expected"
Extra volume for QC or trace LORs etc. | |
| COOLER SEAL (circle appropriate) | | | | | | | |
| Moist: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 20 | CP1091-BH222-180119-0.5 | S | 18.01.19 | 1135 | 18.01.19 | 16 | |
| 21 | CP1091-BH222-180119-1.0 | S | 18.01.19 | 1140 | | | please freeze |
| 22 | CP1091-BH222-180119-1.5 | S | 18.01.19 | 1145 | | | bags for acid sulfate analysis |
| 23 | CP1091-BH222-180119-2.0 | S | 18.01.19 | 1150 | | | |
| 24 | CP1091-BH222-180119-2.5 | S | 18.01.19 | 1155 | | | |
| 25 | CP1142-BH54-180119-0.2 | S | 18.01.19 | 1340 | | 15 | |
| 26 | CP1142-BH54-180119-0.5 | S | 18.01.19 | 1345 | | | |
| 27 | CP1142-BH54-180119-1.0 | S | 18.01.19 | 1350 | | | |
| 28 | CP1142-BH54-180119-1.5 | S | 18.01.19 | 1400 | | | |
| 29 | CP1091-315-180119 | W | | | | 85 | Labelled as AC314 and AC415 |
| 30 | CP1091-315-180119 | W | | | | 20 | please upload as AC315/AC415 |
| 31 | CP1091-315-180119 | W | | | | 10 | |
| 32 | CP1091-315-180119 | W | | | | 10 | |
| 33 | CP1091-315-180119 | W | | | | 10 | |
| 34 | CP1091-315-180119 | W | | | | 10 | |
| 35 | CP1091-315-180119 | W | | | | 10 | |
| 36 | CP1091-315-180119 | W | | | | 10 | |
| 37 | CP1091-315-180119 | W | | | | 10 | |
| 38 | CP1091-315-180119 | W | | | | 10 | |
| 39 | CP1091-315-180119 | W | | | | 10 | |
| 40 | CP1091-315-180119 | W | | | | 10 | |
| 41 | CP1091-315-180119 | W | | | | 10 | |
| 42 | CP1091-315-180119 | W | | | | 10 | |
| 43 | CP1091-315-180119 | W | | | | 10 | |
| 44 | CP1091-315-180119 | W | | | | 10 | |
| 45 | CP1091-315-180119 | W | | | | 10 | |
| 46 | CP1091-315-180119 | W | | | | 10 | |
| 47 | CP1091-315-180119 | W | | | | 10 | |
| 48 | CP1091-315-180119 | W | | | | 10 | |
| 49 | CP1091-315-180119 | W | | | | 10 | |
| 50 | CP1091-315-180119 | W | | | | 10 | |
| 51 | CP1091-315-180119 | W | | | | 10 | |
| 52 | CP1091-315-180119 | W | | | | 10 | |
| 53 | CP1091-315-180119 | W | | | | 10 | |
| 54 | CP1091-315-180119 | W | | | | 10 | |
| 55 | CP1091-315-180119 | W | | | | 10 | |
| 56 | CP1091-315-180119 | W | | | | 10 | |
| 57 | CP1091-315-180119 | W | | | | 10 | |
| 58 | CP1091-315-180119 | W | | | | 10 | |
| 59 | CP1091-315-180119 | W | | | | 10 | |
| 60 | CP1091-315-180119 | W | | | | 10 | |
| 61 | CP1091-315-180119 | W | | | | 10 | |
| 62 | CP1091-315-180119 | W | | | | 10 | |
| 63 | CP1091-315-180119 | W | | | | 10 | |
| 64 | CP1091-315-180119 | W | | | | 10 | |
| 65 | CP1091-315-180119 | W | | | | 10 | |
| 66 | CP1091-315-180119 | W | | | | 10 | |
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| 80 | CP1091-315-180119 | W | | | | 10 | |
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| 84 | CP1091-315-180119 | W | | | | 10 | |
| 85 | CP1091-315-180119 | W | | | | 10 | |
| 86 | CP1091-315-180119 | W | | | | 10 | |
| 87 | CP1091-315-180119 | W | | | | 10 | |
| 88 | CP1091-315-180119 | W | | | | 10 | |
| 89 | CP1091-315-180119 | W | | | | 10 | |
| 90 | CP1091-315-180119 | W | | | | 10 | |
| 91 | CP1091-315-180119 | W | | | | 10 | |
| 92 | CP1091-315-180119 | W | | | | 10 | |
| 93 | CP1091-315-180119 | W | | | | 10 | |
| 94 | CP1091-315-180119 | W | | | | 10 | |
| 95 | CP1091-315-180119 | W | | | | 10 | |
| 96 | CP1091-315-180119 | W | | | | 10 | |
| 97 | CP1091-315-180119 | W | | | | 10 | |
| 98 | CP1091-315-180119 | W | | | | 10 | |
| 99 | CP1091-315-180119 | W | | | | 10 | |
| 100 | CP1091-315-180119 | W | | | | 10 | |

Most freeze bags for acid sulfate analysis.

COC Melbourne

From: COC Melbourne
Sent: Friday, 18 January 2019 7:55 PM
To: [REDACTED]
Subject: On Hold - EM1900641 - AECOMAU (60592634)
Attachments: 18012019184750-0001.pdf

Hi [REDACTED]

Please see attached for samples received without analysis.

Regards,

[REDACTED]
Sample Receipt Officer – Springvale
Environmental



T +61 3 8549 9600 **D** +61 3 8549 9650

F +61 3 8549 9626

[REDACTED]@alsglobal.com

2-4 Westall Rd

Springvale Vic 3171

Australia

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EnviroMail™ 121 Dissolved metals | **EnviroMail™ 120** – Microtox | **EnviroMail™ 119** – PFAS in Biota

Right Solutions • Right Partner

www.alsglobal.com

[REDACTED]

From: [REDACTED]@aecom.com>
Sent: Monday, 21 January 2019 11:55 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: On Hold - EM1900641 - AECOMAU (60592634)

Hi [REDACTED]

Can you please relabel QC527 to QC530?

Please analyse:

1. CPT091_BH34_180119_0.2 = IWRG621
2. CPT091_BH34_180119_0.5 = IWRG621
3. CPT142_BH54_180119_0.2 = IWRG621
4. CPT142_BH54_180119_0.5 = IWRG621
5. CPT091_BH34_180119_1.0 = SPOCAS (EA029)
6. CPT091_BH34_180119_2.0 = SPOCAS (EA029)
7. CPT142_BH54_180119_0.2 = Chromium Suite (EA033)
8. CPT142_BH54_180119_0.5 = Chromium Suite (EA033)
9. CPT091_BH220_180119_0.5 = Chromium Suite (EA033)
10. CPT091_BH220_180119_1.5 = Chromium Suite (EA033)
11. CPT091_BH221_180119_0.5 = Chromium Suite (EA033)
12. CPT091_BH221_180119_1.5 = Chromium Suite (EA033)
13. CPT091_BH222_180119_0.5 = Chromium Suite (EA033)
14. CPT091_BH222_180119_1.5 = Chromium Suite (EA033)
15. QC315_180119 = IWRG621 water equivalent
16. QC415_170119 = TPH(C6-C9)/BTEXN
17. QC528_170119 = TPH(C6-C9)/BTEXN
18. QC529_170119 = TPH(C6-C9)/BTEXN
19. QC530_170119 (labelled on COC and bottle as QC527) = TPH(C6-C9)/BTEXN

At 3 days TAT. Thanks!

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

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aecom.com

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From: [REDACTED]@alsglobal.com]
Sent: Monday, 21 January 2019 10:32 AM
To: [REDACTED]
Subject: On Hold - EM1900641 - AECOMAU (60592634)

Hi [REDACTED]

Please see attached samples received without analysis.

Thanks

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900641

| | |
|---|---|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : ----</p> <p>Sampler : [REDACTED]</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 4</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|---|---|

Dates

| | |
|---|--|
| <p>Date Samples Received : 18-Jan-2019 04:10</p> <p>Client Requested Due : 24-Jan-2019</p> <p>Date : </p> | <p>Issue Date : 21-Jan-2019</p> <p>Scheduled Reporting Date : 24-Jan-2019</p> |
|---|--|

Delivery Details

| | |
|---|---|
| <p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 3</p> <p>Receipt Detail :</p> | <p>Security Seal : Intact.</p> <p>Temperature : 4.7°C - Ice present</p> <p>No. of samples received / analysed : 33 / 17</p> |
|---|---|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|---|--|
| Dissolved Mercury by FIMS : EG035F | | |
| CPT_QC315_180119 | - Clear Plastic Bottle - Nitric Acid; Unspecified | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite A : EG020A-F | | |
| CPT_QC315_180119 | - Clear Plastic Bottle - Nitric Acid; Unspecified | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite B : EG020B-F | | |
| CPT_QC315_180119 | - Clear Plastic Bottle - Nitric Acid; Unspecified | - Clear Plastic Bottle - Nitric Acid; Filtered |

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM1900641-001 : 18-Jan-2019 09:15 : CPT091_BH34_180119_0.2
EM1900641-002 : 18-Jan-2019 09:20 : CPT091_BH34_180119_0.5
EM1900641-003 : 18-Jan-2019 09:25 : CPT091_BH34_180119_1.0
EM1900641-005 : 18-Jan-2019 09:35 : CPT091_BH34_180119_2.0
EM1900641-008 : 18-Jan-2019 10:00 : CPT091_BH220_180119_0.5
EM1900641-010 : 18-Jan-2019 10:10 : CPT091_BH220_180119_1.5
EM1900641-014 : 18-Jan-2019 10:40 : CPT091_BH221_180119_0.5
EM1900641-016 : 18-Jan-2019 10:50 : CPT091_BH221_180119_1.5
EM1900641-020 : 18-Jan-2019 11:35 : CPT091_BH222_180119_0.5
EM1900641-022 : 18-Jan-2019 11:45 : CPT091_BH222_180119_1.5
EM1900641-025 : 18-Jan-2019 13:40 : CPT142_BH54_180119_0.2
EM1900641-026 : 18-Jan-2019 13:45 : CPT142_BH54_180119_0.5

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: SOIL

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
|----------------------|-----------------------------|-------------------------|---|------------------------|--|--------------------------------------|-------------------------|
| EM1900641-001 | 18-Jan-2019 09:15 | CPT091_BH34_180119_0... | | | | ✓ | ✓ |
| EM1900641-002 | 18-Jan-2019 09:20 | CPT091_BH34_180119_0... | | | | ✓ | ✓ |
| EM1900641-003 | 18-Jan-2019 09:25 | CPT091_BH34_180119_1... | | ✓ | | | |
| EM1900641-004 | 18-Jan-2019 09:30 | CPT091_BH34_180119_1... | ✓ | | | | |
| EM1900641-005 | 18-Jan-2019 09:35 | CPT091_BH34_180119_2... | | ✓ | | | |
| EM1900641-006 | 18-Jan-2019 09:40 | CPT091_BH34_180119_2... | ✓ | | | | |
| EM1900641-007 | 18-Jan-2019 09:55 | CPT091_BH220_180119_... | ✓ | | | | |
| EM1900641-008 | 18-Jan-2019 10:00 | CPT091_BH220_180119_... | | | ✓ | | |
| EM1900641-009 | 18-Jan-2019 10:05 | CPT091_BH220_180119_... | ✓ | | | | |
| EM1900641-010 | 18-Jan-2019 10:10 | CPT091_BH220_180119_... | | | ✓ | | |
| EM1900641-011 | 18-Jan-2019 10:15 | CPT091_BH220_180119_... | ✓ | | | | |
| EM1900641-012 | 18-Jan-2019 10:20 | CPT091_BH220_180119_... | ✓ | | | | |
| EM1900641-013 | 18-Jan-2019 10:35 | CPT091_BH221_180119_... | ✓ | | | | |
| EM1900641-014 | 18-Jan-2019 10:40 | CPT091_BH221_180119_... | | | ✓ | | |
| EM1900641-015 | 18-Jan-2019 10:45 | CPT091_BH221_180119_... | ✓ | | | | |
| EM1900641-016 | 18-Jan-2019 10:50 | CPT091_BH221_180119_... | | | ✓ | | |



| | | | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
|---------------|-------------------|-------------------------|---|------------------------|--|--------------------------------------|-------------------------|
| EM1900641-017 | 18-Jan-2019 10:55 | CPT091_BH221_180119_... | ✓ | | | | |
| EM1900641-018 | 18-Jan-2019 11:00 | CPT091_BH221_180119_... | ✓ | | | | |
| EM1900641-019 | 18-Jan-2019 11:30 | CPT091_BH222_180119_... | ✓ | | | | |
| EM1900641-020 | 18-Jan-2019 11:35 | CPT091_BH222_180119_... | | | ✓ | | |
| EM1900641-021 | 18-Jan-2019 11:40 | CPT091_BH222_180119_... | ✓ | | | | |
| EM1900641-022 | 18-Jan-2019 11:45 | CPT091_BH222_180119_... | | | ✓ | | |
| EM1900641-023 | 18-Jan-2019 11:50 | CPT091_BH222_180119_... | ✓ | | | | |
| EM1900641-024 | 18-Jan-2019 11:55 | CPT091_BH222_180119_... | ✓ | | | | |
| EM1900641-025 | 18-Jan-2019 13:40 | CPT142_BH54_180119_0... | | | ✓ | ✓ | ✓ |
| EM1900641-026 | 18-Jan-2019 13:45 | CPT142_BH54_180119_0... | | | ✓ | ✓ | ✓ |
| EM1900641-027 | 18-Jan-2019 13:55 | CPT142_BH54_180119_1... | ✓ | | | | |
| EM1900641-028 | 18-Jan-2019 14:00 | CPT142_BH54_180119_1... | ✓ | | | | |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------------------|
| EM1900641-029 | 18-Jan-2019 00:00 | CPT_QC315_180119 | ✓ | |
| EM1900641-030 | 18-Jan-2019 00:00 | CPT_QC415_180119 | | ✓ |
| EM1900641-031 | 18-Jan-2019 00:00 | CPT_QC530 | | ✓ |
| EM1900641-032 | 18-Jan-2019 00:00 | CPT_QC528 | | ✓ |
| EM1900641-033 | 18-Jan-2019 00:00 | CPT_QC529 | | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| <div>□ □ □</div>
Client Sample ID(s) | Container | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|---|--------------------------------|--------------------|------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| CPT_QC315_180119 | Clear Plastic Bottle - Natural | ---- | 18-Jan-2019 | 18-Jan-2019 | ✔ | 21-Jan-2019 | ✖ |



Requested Deliverables

ACCOUNTS PAYABLE

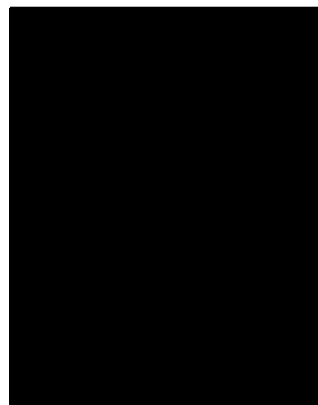
- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com



- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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CERTIFICATE OF ANALYSIS

Work Order : **EM1900641**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : [REDACTED]
Site : ----
Quote number : EN/096/18
No. of samples received : 33
No. of samples analysed : 17

Page : 1 of 23
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 18-Jan-2019 04:10
Date Analysis Commenced : 21-Jan-2019
Issue Date : 24-Jan-2019 19:30



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| Signatories | Position | Accreditation Category |
|--|----------------------------------|---|
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



□□□ □ □□□ □□□□

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- EG048G: EM1900641#25 Poor matrix spike recovery for hexavalent chromium due to matrix effects.
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m³ in-situ soil, multiply reported results x wet bulk density of soil in t/m³.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



□ □ □ □ □ □ □ □ □ □

| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT091_BH34_18011
9_0.2 | CPT091_BH34_18011
9_0.5 | CPT091_BH34_18011
9_1.0 | CPT091_BH34_18011
9_2.0 | CPT091_BH220_1801
19_0.5 |
|---|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Client sampling date / time | | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:20 | 18-Jan-2019 09:25 | 18-Jan-2019 09:35 | 18-Jan-2019 10:00 |
| Compound | CAS Number | LOR | Unit | | EM1900641-001 | EM1900641-002 | EM1900641-003 | EM1900641-005 | EM1900641-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 5.2 | 5.2 | ---- | ---- | ---- |
| EA029-A: pH Measurements | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | ---- | 4.9 | 5.3 | ---- |
| pH OX (23B) | ---- | 0.1 | pH Unit | | ---- | ---- | 5.0 | 6.1 | ---- |
| EA029-B: Acidity Trail | | | | | | | | | |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | ---- | 20 | 15 | ---- |
| Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | | ---- | ---- | 23 | 19 | ---- |
| Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | | ---- | ---- | 2 | 4 | ---- |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.020 | % pyrite S | | ---- | ---- | 0.033 | 0.024 | ---- |
| sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.020 | % pyrite S | | ---- | ---- | 0.037 | 0.031 | ---- |
| sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.020 | % pyrite S | | ---- | ---- | <0.020 | <0.020 | ---- |
| EA029-C: Sulfur Trail | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.020 | % S | | ---- | ---- | 0.026 | <0.020 | ---- |
| Peroxide Sulfur (23De) | ---- | 0.020 | % S | | ---- | ---- | 0.033 | 0.123 | ---- |
| Peroxide Oxidisable Sulfur (23E) | ---- | 0.020 | % S | | ---- | ---- | <0.020 | 0.123 | ---- |
| acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | | ---- | ---- | <10 | 77 | ---- |
| EA029-D: Calcium Values | | | | | | | | | |
| KCl Extractable Calcium (23Vh) | ---- | 0.020 | % Ca | | ---- | ---- | 0.230 | 0.225 | ---- |
| Peroxide Calcium (23Wh) | ---- | 0.020 | % Ca | | ---- | ---- | 0.256 | 0.246 | ---- |
| Acid Reacted Calcium (23X) | ---- | 0.020 | % Ca | | ---- | ---- | 0.026 | 0.022 | ---- |
| acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | | ---- | ---- | 13 | 11 | ---- |
| sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.020 | % S | | ---- | ---- | 0.021 | <0.020 | ---- |
| EA029-E: Magnesium Values | | | | | | | | | |
| KCl Extractable Magnesium (23Sm) | ---- | 0.020 | % Mg | | ---- | ---- | 0.274 | 0.289 | ---- |
| Peroxide Magnesium (23Tm) | ---- | 0.020 | % Mg | | ---- | ---- | 0.283 | 0.302 | ---- |
| Acid Reacted Magnesium (23U) | ---- | 0.020 | % Mg | | ---- | ---- | <0.020 | <0.020 | ---- |
| Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | | ---- | ---- | <10 | 11 | ---- |
| sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.020 | % S | | ---- | ---- | <0.020 | <0.020 | ---- |
| EA029-H: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | ---- | 1.5 | 1.5 | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | ---- | 0.04 | 0.15 | ---- |



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| | | | | | | | | | |
|---|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT091_BH34_18011
9_0.2 | CPT091_BH34_18011
9_0.5 | CPT091_BH34_18011
9_1.0 | CPT091_BH34_18011
9_2.0 | CPT091_BH220_1801
19_0.5 |
| Client sampling date / time | | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:20 | 18-Jan-2019 09:25 | 18-Jan-2019 09:35 | 18-Jan-2019 10:00 |
| Compound | CAS Number | LOR | Unit | | EM1900641-001 | EM1900641-002 | EM1900641-003 | EM1900641-005 | EM1900641-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA029-H: Acid Base Accounting - Continued | | | | | | | | | |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | ---- | 25 | 92 | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | ---- | 2 | 7 | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | ---- | 0.04 | 0.15 | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | ---- | 25 | 92 | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | ---- | 2 | 7 | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | ---- | ---- | ---- | ---- | 5.0 | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | ---- | ---- | ---- | ---- | 23 | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | ---- | ---- | ---- | ---- | 0.04 | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | ---- | ---- | ---- | ---- | <0.005 | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | ---- | ---- | ---- | ---- | <10 | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | ---- | ---- | ---- | ---- | 1.5 | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | ---- | ---- | ---- | ---- | 0.04 | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | ---- | ---- | ---- | 23 | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | ---- | ---- | ---- | 2 | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | ---- | ---- | ---- | 0.04 | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | ---- | ---- | ---- | 23 | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | ---- | ---- | ---- | 2 | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 25.9 | 32.1 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | 29 | 27 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | 15 | 13 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | 14 | 8 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | 6 | <5 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT091_BH34_18011
9_0.2 | CPT091_BH34_18011
9_0.5 | CPT091_BH34_18011
9_1.0 | CPT091_BH34_18011
9_2.0 | CPT091_BH220_1801
19_0.5 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Client sampling date / time | | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:20 | 18-Jan-2019 09:25 | 18-Jan-2019 09:35 | 18-Jan-2019 10:00 |
| Compound | CAS Number | LOR | Unit | | EM1900641-001 | EM1900641-002 | EM1900641-003 | EM1900641-005 | EM1900641-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | ---- | ---- | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | 2 | <1 | ---- | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | 220 | 180 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | ---- | ---- | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | <0.2 | <0.2 | ---- | ---- | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- | ---- |

| Client sampling date / time | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:20 | 18-Jan-2019 09:25 | 18-Jan-2019 09:35 | 18-Jan-2019 10:00 |
|--|-------------------|------|-------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Compound | CAS Number | LOR | Unit | EM1900641-001 | EM1900641-002 | EM1900641-003 | EM1900641-005 | EM1900641-008 |
| | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | <0.01 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- |
| 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | ---- | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | ---- | ---- | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | <1 | <1 | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT091_BH34_18011
9_0.2 | CPT091_BH34_18011
9_0.5 | CPT091_BH34_18011
9_1.0 | CPT091_BH34_18011
9_2.0 | CPT091_BH220_1801
19_0.5 |
|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Client sampling date / time | | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:20 | 18-Jan-2019 09:25 | 18-Jan-2019 09:35 | 18-Jan-2019 10:00 |
| Compound | CAS Number | LOR | Unit | | EM1900641-001 | EM1900641-002 | EM1900641-003 | EM1900641-005 | EM1900641-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | 0.6 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | 1.2 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT091_BH34_18011
9_0.2 | CPT091_BH34_18011
9_0.5 | CPT091_BH34_18011
9_1.0 | CPT091_BH34_18011
9_2.0 | CPT091_BH220_1801
19_0.5 |
|--|--------------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Client sampling date / time | | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:20 | 18-Jan-2019 09:25 | 18-Jan-2019 09:35 | 18-Jan-2019 10:00 |
| Compound | CAS Number | LOR | Unit | | EM1900641-001 | EM1900641-002 | EM1900641-003 | EM1900641-005 | EM1900641-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | ---- | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | ---- | ---- | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | 100 | <100 | ---- | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | 100 | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | 100 | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | 100 | <50 | ---- | ---- | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | <50 | ---- | ---- | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | ---- | ---- | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 108 | 116 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 63.3 | 76.4 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 61.2 | 73.6 | ---- | ---- | ---- | ---- |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT091_BH34_18011
9_0.2 | CPT091_BH34_18011
9_0.5 | CPT091_BH34_18011
9_1.0 | CPT091_BH34_18011
9_2.0 | CPT091_BH220_1801
19_0.5 |
|-----------------------------|------------|-----|------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Client sampling date / time | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:20 | 18-Jan-2019 09:25 | 18-Jan-2019 09:35 | 18-Jan-2019 10:00 |
| Compound | CAS Number | LOR | Unit | EM1900641-001 | EM1900641-002 | EM1900641-003 | EM1900641-005 | EM1900641-008 |
| | | | | Result | Result | Result | Result | Result |

EP074S: VOC Surrogates (Ultra-Trace) - Continued

| | | | | | | | | |
|----------------------|----------|-----|---|------|------|------|------|------|
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 76.1 | 94.0 | ---- | ---- | ---- |
|----------------------|----------|-----|---|------|------|------|------|------|

EP075S: Acid Extractable Surrogates (Waste Classification)

| | | | | | | | | |
|----------------------|------------|-------|---|-----|-----|------|------|------|
| Phenol-d6 | 13127-88-3 | 0.025 | % | 108 | 110 | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 115 | 112 | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 117 | 111 | ---- | ---- | ---- |

EP075T: Base/Neutral Extractable Surrogates (Waste Classification)

| | | | | | | | | |
|------------------------|-----------|-------|---|-----|-----|------|------|------|
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 120 | 115 | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 113 | 108 | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 124 | 122 | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 132 | 130 | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 110 | 109 | ---- | ---- | ---- |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT091_BH220_1801
19_1.5 | CPT091_BH221_1801
19_0.5 | CPT091_BH221_1801
19_1.5 | CPT091_BH222_1801
19_0.5 | CPT091_BH222_1801
19_1.5 |
|---|------------|-------|-------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 18-Jan-2019 10:10 | 18-Jan-2019 10:40 | 18-Jan-2019 10:50 | 18-Jan-2019 11:35 | 18-Jan-2019 11:45 |
| Compound | CAS Number | LOR | Unit | EM1900641-010 | EM1900641-014 | EM1900641-016 | EM1900641-020 | EM1900641-022 |
| | | | | Result | Result | Result | Result | Result |
| EA033-A: Actual Acidity | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.5 | 5.5 | 5.7 | 5.1 | 5.3 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 8 | 10 | 4 | 20 | 12 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | <0.02 | 0.03 | <0.02 |
| EA033-B: Potential Acidity | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.009 | <0.005 | 0.009 | 0.007 | 0.006 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | <10 | <10 | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.02 | <0.02 | <0.02 | 0.04 | 0.02 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 13 | <10 | 10 | 24 | 15 |
| Liming Rate | ---- | 1 | kg CaCO3/t | <1 | <1 | <1 | 2 | 1 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.02 | <0.02 | <0.02 | 0.04 | 0.02 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 13 | <10 | 10 | 24 | 15 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | <1 | <1 | 2 | 1 |



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| | | | | | | | | | |
|---|------------|-------|-------------|------------------|----------------------------|----------------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT142_BH54_18011
9_0.2 | CPT142_BH54_18011
9_0.5 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 13:40 | 18-Jan-2019 13:45 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1900641-025 | EM1900641-026 | | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | 4.9 | 5.8 | | ---- | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.0 | 5.4 | | ---- | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 18 | 9 | | ---- | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.03 | <0.02 | | ---- | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | <0.005 | | ---- | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.03 | <0.02 | | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 18 | <10 | | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | 1 | <1 | | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.03 | <0.02 | | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 18 | <10 | | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 1 | <1 | | ---- | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 9.1 | 17.1 | | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | | ---- | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | 12 | 21 | | ---- | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | 13 | <5 | | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | 21 | 46 | | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | | ---- | ---- | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | | ---- | ---- | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | 15 | 15 | | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | | ---- | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | | ---- | ---- | ---- |



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|--|-------------------|------|-------|------------------|----------------------------|----------------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT142_BH54_18011
9_0.2 | CPT142_BH54_18011
9_0.5 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 13:40 | 18-Jan-2019 13:45 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900641-025 | EM1900641-026 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | 2 | <1 | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 170 | 110 | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | <0.4 | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | <0.04 | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |



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|--|-------------------|------|-------|------------------|----------------------------|----------------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT142_BH54_18011
9_0.2 | CPT142_BH54_18011
9_0.5 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 13:40 | 18-Jan-2019 13:45 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900641-025 | EM1900641-026 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |



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|---|-------------------|------|-------|------------------|----------------------------|----------------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT142_BH54_18011
9_0.2 | CPT142_BH54_18011
9_0.5 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 13:40 | 18-Jan-2019 13:45 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900641-025 | EM1900641-026 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | 0.6 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | 1.2 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |



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|---|--------------------------|-------|-------|------------------|----------------------------|----------------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT142_BH54_18011
9_0.2 | CPT142_BH54_18011
9_0.5 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 13:40 | 18-Jan-2019 13:45 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900641-025 | EM1900641-026 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | <10 | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | <10 | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | <10 | ---- | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 111 | 110 | ---- | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 79.5 | 74.0 | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 75.2 | 72.4 | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 82.6 | 80.7 | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 100.0 | 94.7 | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 102 | 100 | ---- | ---- | ---- |



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Sub-Matrix: **SOIL**
 (Matrix: **SOIL**)

Client sample ID

| | | | | CPT142_BH54_18011
9_0.2 | CPT142_BH54_18011
9_0.5 | ---- | ---- | ---- |
|---|------------|-------|------|----------------------------|----------------------------|-------|-------|-------|
| Client sampling date / time | | | | 18-Jan-2019 13:40 | 18-Jan-2019 13:45 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1900641-025 | EM1900641-026 | ----- | ----- | ----- |
| | | | | Result | Result | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 96.0 | 96.5 | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 106 | 107 | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 96.5 | 92.7 | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 109 | 109 | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 115 | 117 | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 96.1 | 96.7 | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC315_180119 | CPT_QC415_180119 | CPT_QC530 | CPT_QC528 | CPT_QC529 |
|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900641-029 | EM1900641-030 | EM1900641-031 | EM1900641-032 | EM1900641-033 |
| | | | | | Result | Result | Result | Result | Result |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 6.84 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | <0.005 | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | <0.004 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC315_180119 | CPT_QC415_180119 | CPT_QC530 | CPT_QC528 | CPT_QC529 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900641-029 | EM1900641-030 | EM1900641-031 | EM1900641-032 | EM1900641-033 |
| | | | | | Result | Result | Result | Result | Result |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Indeno(1,2,3.cd)pyrene | 193-39-5 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC315_180119 | CPT_QC415_180119 | CPT_QC530 | CPT_QC528 | CPT_QC529 |
|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900641-029 | EM1900641-030 | EM1900641-031 | EM1900641-032 | EM1900641-033 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC315_180119 | CPT_QC415_180119 | CPT_QC530 | CPT_QC528 | CPT_QC529 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900641-029 | EM1900641-030 | EM1900641-031 | EM1900641-032 | EM1900641-033 |
| | | | | | Result | Result | Result | Result | Result |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 73.5 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 86.9 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 78.9 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 88.3 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 26.1 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 58.6 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 54.0 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 74.2 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 74.0 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 76.0 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC315_180119 | CPT_QC415_180119 | CPT_QC530 | CPT_QC528 | CPT_QC529 |
|---|------------|------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900641-029 | EM1900641-030 | EM1900641-031 | EM1900641-032 | EM1900641-033 |
| | | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.25 | % | | 34.0 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.25 | % | | 83.4 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.25 | % | | 88.3 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.25 | % | | 89.9 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.25 | % | | 92.3 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.25 | % | | 105 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.25 | % | | 104 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.25 | % | | 98.2 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 90.7 | 92.7 | 85.2 | 89.5 | 94.6 |
| Toluene-D8 | 2037-26-5 | 2 | % | | 83.3 | 84.4 | 71.4 | 81.1 | 90.8 |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 91.1 | 91.9 | 83.8 | 101 | 105 |



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| | | | |
|---|-------------------|-----------------|------|
| Sub-Matrix: SOIL | | □□□□ □ □□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

| | | | |
|---|-------------------|-----------------|------|
| Sub-Matrix: WATER | | □□□□ □ □□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 13 | 90 |
| 2-Chlorophenol-D4 | 93951-73-6 | 42 | 117 |
| 2,4,6-Tribromophenol | 118-79-6 | 52 | 140 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 49 | 136 |

| Sub-Matrix: WATER | | ☐☐☐☐ ☐ ☐☐☐ ☐☐ s ☐ | |
|--|------------|-------------------|-----|
| Compound | CAS Number | ☐☐% | ☐☐☐ |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 49 | 128 |
| 2-Fluorobiphenyl | 321-60-8 | 57 | 137 |
| Anthracene-d10 | 1719-06-8 | 67 | 137 |
| 4-Terphenyl-d14 | 1718-51-0 | 66 | 136 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900641 | Page | : 1 of 8 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 18-Jan-2019 04:10 |
| Order number | : ---- | Date Analysed | : 21-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 24-Jan-2019 19:31 |
| No. of samples received | : 33 | | |
| No. of samples analysed | : 17 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT091_BH34
_180119_0.2 | CPT091_BH34
_180119_0.5 | CPT142_BH54
_180119_0.2 | CPT142_BH54
_180119_0.5 | ---- |
|--|--------------|------|---------|--------------------|--------|----------------------------|----------------------------|----------------------------|----------------------------|-------|
| | | | | Sampling date/time | | | | | | |
| | | | | | | | | | | |
| Compound | Method | LOR | Unit | | | EM1900641-001 | EM1900641-002 | EM1900641-025 | EM1900641-026 | ----- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.2 | 5.2 | 4.9 | 5.8 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | <5 | <5 | <5 | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 29 | 27 | 12 | 21 | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 15 | 13 | 13 | <5 | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | <2 | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 14 | 8 | 21 | 46 | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 6 | <5 | 15 | 15 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | 2 | <1 | 2 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 220 | 180 | 170 | 110 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | | CPT091_BH34
_180119_0.2 | CPT091_BH34
_180119_0.5 | CPT142_BH54
_180119_0.2 | CPT142_BH54
_180119_0.5 | ---- |
|--|--------------|------|-------|--------------------|---------------|---------------|----------------------------|----------------------------|----------------------------|----------------------------|-------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 18-Jan-2019
09:15 | 18-Jan-2019
09:20 | 18-Jan-2019
13:40 | 18-Jan-2019
13:45 | ---- |
| Compound | Method | LOR | Unit | | □□□□
□□□ □ | □□□□
□□□ □ | EM1900641-001 | EM1900641-002 | EM1900641-025 | EM1900641-026 | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 20 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 400 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 16 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 50 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 2600 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 40000 | 100 | <50 | <50 | <50 | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT091_BH34 | CPT091_BH34 | CPT142_BH54 | CPT142_BH54 | ---- |
|--|--------------|------|---------|--------------------|--------------------|---------------|---------------|----------------------|----------------------|----------------------|----------------------|------|
| | | | | Sampling date/time | | | | 180119_0.2 | 180119_0.5 | 180119_0.2 | 180119_0.5 | |
| | | | | | | | | 18-Jan-2019
09:15 | 18-Jan-2019
09:20 | 18-Jan-2019
13:40 | 18-Jan-2019
13:45 | |
| Compound | Method | LOR | Unit | □□□ □□
□□□ □□ | □□□□□ □□
□□□ □□ | EM1900641-001 | EM1900641-002 | EM1900641-025 | EM1900641-026 | ----- | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.2 | 5.2 | 4.9 | 5.8 | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 29 | 27 | 12 | 21 | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 15 | 13 | 13 | <5 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | <2 | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 14 | 8 | 21 | 46 | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 6 | <5 | 15 | 15 | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | 2 | <1 | 2 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 220 | 180 | 170 | 110 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | | CPT091_BH34
_180119_0.2 | CPT091_BH34
_180119_0.5 | CPT142_BH54
_180119_0.2 | CPT142_BH54
_180119_0.5 | ---- |
|--|--------------|------|-------|--------------------|---------------|---------------|----------------------------|----------------------------|----------------------------|----------------------------|-------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 18-Jan-2019
09:15 | 18-Jan-2019
09:20 | 18-Jan-2019
13:40 | 18-Jan-2019
13:45 | ---- |
| Compound | Method | LOR | Unit | | □□□□
□□□ □ | □□□□
□□□ □ | EM1900641-001 | EM1900641-002 | EM1900641-025 | EM1900641-026 | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 100 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 10 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 650 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 10000 | 100 | <50 | <50 | <50 | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT091_BH34
_180119_0.2 | CPT091_BH34
_180119_0.5 | CPT142_BH54
_180119_0.2 | CPT142_BH54
_180119_0.5 | ---- |
|--|--------------|------|---------|--------------------|-----|----------------------------|----------------------------|----------------------------|----------------------------|-------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | | | 18-Jan-2019
09:15 | 18-Jan-2019
09:20 | 18-Jan-2019
13:40 | 18-Jan-2019
13:45 | ----- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.2 | 5.2 | 4.9 | 5.8 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | <5 | <5 | <5 | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 29 | 27 | 12 | 21 | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 15 | 13 | 13 | <5 | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | <2 | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 14 | 8 | 21 | 46 | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 6 | <5 | 15 | 15 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | 2 | <1 | 2 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 220 | 180 | 170 | 110 | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | | |
|---|--------------|------|-------|------------------|------|-------|------------------------|------------------------|------------------------|------------------------|-------|
| Sub-Matrix: SOIL | | | | Client sample ID | | | CPT091_BH34_180119_0.2 | CPT091_BH34_180119_0.5 | CPT142_BH54_180119_0.2 | CPT142_BH54_180119_0.5 | ---- |
| Sampling date/time | | | | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:20 | 18-Jan-2019 13:40 | 18-Jan-2019 13:45 | ---- |
| Compound | Method | LOR | Unit | | | | EM1900641-001 | EM1900641-002 | EM1900641-025 | EM1900641-026 | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | 100 | <50 | <50 | <50 | <50 | ---- |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900641 | Page | : 1 of 22 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 18-Jan-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 21-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 24-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : ---- | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 33 | | |
| No. of samples analysed | : 17 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□□□ □□ □□

[REDACTED]
[REDACTED]
[REDACTED]

□□□□□□

Senior Acid Sulfate Soil Chemist
Senior Inorganic Chemist
Senior Organic Chemist

□□□ □□□ □□□ □□□ □

Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2147769) | | | | | | | | | |
| EM1900606-151 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 9.0 | 9.0 | 0.00 | 0% - 20% |
| EM1900656-004 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 6.5 | 6.7 | 3.03 | 0% - 20% |
| EA029-A: pH Measurements (QC Lot: 2151276) | | | | | | | | | |
| EM1900529-002 | Anonymous | EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | 4.7 | 4.7 | 0.00 | 0% - 20% |
| | | EA029: pH OX (23B) | ---- | 0.1 | pH Unit | 4.9 | 4.8 | 2.06 | 0% - 20% |
| EA029-B: Acidity Trail (QC Lot: 2151276) | | | | | | | | | |
| EM1900529-002 | Anonymous | EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.044 | 0.043 | 3.14 | No Limit |
| | | EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | 0.069 | 0.073 | 4.51 | No Limit |
| | | EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | 0.025 | 0.030 | 16.5 | No Limit |
| | | EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 27 | 27 | 0.00 | 0% - 50% |
| | | EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | 43 | 45 | 4.51 | 0% - 20% |
| | | EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | 16 | 19 | 16.5 | No Limit |
| EA029-C: Sulfur Trail (QC Lot: 2151276) | | | | | | | | | |
| EM1900529-002 | Anonymous | EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | 0.021 | 0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | 0.021 | 0.020 | 0.00 | No Limit |
| | | EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | 13 | 12 | 0.00 | No Limit |
| EA029-D: Calcium Values (QC Lot: 2151276) | | | | | | | | | |
| EM1900529-002 | Anonymous | EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | 0.040 | 0.042 | 5.56 | No Limit |
| | | EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | 0.058 | 0.068 | 16.4 | No Limit |
| | | EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | 0.026 | 25.7 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA029-D: Calcium Values (QC Lot: 2151276) - continued | | | | | | | | | |
| EM1900529-002 | Anonymous | EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | 0.021 | 0.00 | No Limit |
| | | EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | 13 | 25.5 | No Limit |
| EA029-E: Magnesium Values (QC Lot: 2151276) | | | | | | | | | |
| EM1900529-002 | Anonymous | EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | 0.089 | 0.094 | 5.44 | No Limit |
| | | EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | 0.095 | 0.097 | 2.38 | No Limit |
| | | EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-H: Acid Base Accounting (QC Lot: 2151276) | | | | | | | | | |
| EM1900529-002 | Anonymous | EA029: ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 0.00 | No Limit |
| | | EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.06 | 0.06 | 0.00 | No Limit |
| | | EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.06 | 0.06 | 0.00 | No Limit |
| | | EA029: Liming Rate | ---- | 1 | kg CaCO3/t | 3 | 3 | 0.00 | No Limit |
| | | EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 3 | 3 | 0.00 | No Limit |
| | | EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 40 | 39 | 3.23 | No Limit |
| | | EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 40 | 39 | 3.23 | No Limit |
| EA033-A: Actual Acidity (QC Lot: 2151277) | | | | | | | | | |
| EM1900529-008 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.06 | 0.06 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 40 | 39 | 4.32 | 0% - 20% |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 4.5 | 4.5 | 0.00 | 0% - 20% |
| EM1900531-014 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.03 | 0.03 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 19 | 18 | 10.0 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 5.3 | 5.4 | 1.87 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2151277) | | | | | | | | | |
| EM1900529-008 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.007 | 0.008 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EM1900531-014 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | <0.005 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2147862) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EA055: Moisture Content | ---- | 0.1 | % | 25.9 | 26.8 | 3.32 | 0% - 20% |
| EM1900656-018 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 24.9 | 25.1 | 0.521 | 0% - 20% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2148804) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 14 | 15 | 9.45 | No Limit |

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005T: Total Metals by ICP-AES (QC Lot: 2148804) - continued | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 29 | 30 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 15 | 16 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 6 | 8 | 21.1 | No Limit |
| EM1900656-013 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 6 | 6 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 12 | 8 | 36.4 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2148803) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900656-013 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2147780) | | | | | | | | | |
| EM1900529-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900531-002 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2147781) | | | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900656-018 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | 0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2148151) | | | | | | | | | |
| EM1900529-001 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900531-002 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2148152) | | | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900656-018 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2147783) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 220 | 200 | 7.06 | No Limit |
| EM1900656-013 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 130 | 130 | 0.00 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2147728) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900656-018 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2146527) | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|--|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2146527) - continued | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2146527) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2146527) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| | | EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2147725) | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|-----------------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|----------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2147725) - continued | | | | | | | | | |
| EM1900656-018 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit | |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2147725) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900656-018 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2147725) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2147725) - continued | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900656-018 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2147725) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|-------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2147725) - continued | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900656-018 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2146527) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2147727) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | 100 | 120 | 12.9 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900656-018 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2146527) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2147727) | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | 100 | 130 | 21.6 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|-------------------------------|------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2147727) - continued | | | | | | | | | |
| EM1900641-001 | CPT091_BH34_180119_0.2 | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900656-018 | Anonymous | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2150180) | | | | | | | | | |
| EM1900649-012 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.25 | 7.90 | 8.58 | 0% - 20% |
| EM1900636-014 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 8.35 | 8.35 | 0.00 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2147688) | | | | | | | | | |
| EM1900641-029 | CPT_QC315_180119 | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2147690) | | | | | | | | | |
| EM1900649-012 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.003 | 0.003 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 0.017 | 0.016 | 10.5 | 0% - 50% |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.007 | 0.006 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.008 | 0.007 | 13.0 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900641-029 | CPT_QC315_180119 | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2147689) | | | | | | | | | |
| EM1900649-016 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900641-029 | CPT_QC315_180119 | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2146936) | | | | | | | | | |
| EM1900641-029 | CPT_QC315_180119 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900681-020 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2148063) | | | | | | | | | |
| EM1900533-006 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | 0.006 | 0.006 | 0.00 | No Limit |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2148063) - continued | | | | | | | | | |
| EM1900533-069 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2150179) | | | | | | | | | |
| EM1900636-014 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.4 | 0.4 | 0.00 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2150300) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2147835) | | | | | | | | | |
| EM1900641-029 | CPT_QC315_180119 | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2147835) | | | | | | | | | |
| EM1900641-029 | CPT_QC315_180119 | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2147835) | | | | | | | | | |
| EM1900641-029 | CPT_QC315_180119 | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2147835) | | | | | | | | | |
| EM1900641-029 | CPT_QC315_180119 | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2150299) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2150299) - continued | | | | | | | | | |
| EM1900594-029 | Anonymous | EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | | 205-82-3 | | | | | | |
| | | EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Dibenz(a.h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(g.h.i)perylene | 191-24-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2147836) | | | | | | | | | |
| EM1900641-029 | CPT_QC315_180119 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2150298) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2147836) | | | | | | | | | |
| EM1900641-029 | CPT_QC315_180119 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2150298) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2147836) | | | | | | | | | |
| EM1900641-029 | CPT_QC315_180119 | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA029-A: pH Measurements (QCLot: 2151276) | | | | | | | | |
| EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA029: pH OX (23B) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA029-B: Acidity Trail (QCLot: 2151276) | | | | | | | | |
| EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 90.4 | 70 | 130 |
| EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | <2 | 29.1 mole H+ / t | 98.4 | 70 | 130 |
| EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | <2 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-C: Sulfur Trail (QCLot: 2151276) | | | | | | | | |
| EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | 0.052 % S | 77.1 | 70 | 130 |
| EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | <0.020 | 0.145 % S | 104 | 70 | 130 |
| EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029-D: Calcium Values (QCLot: 2151276) | | | | | | | | |
| EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | <0.020 | 0.151 % Ca | 103 | 70 | 130 |
| EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | <0.020 | 0.296 % Ca | 102 | 70 | 130 |
| EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-E: Magnesium Values (QCLot: 2151276) | | | | | | | | |
| EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | <0.020 | 0.176 % Mg | 97.6 | 70 | 130 |
| EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | <0.020 | 0.175 % Mg | 114 | 70 | 130 |
| EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | ---- | ---- | ---- | ---- |
| EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting (QCLot: 2151276) | | | | | | | | |
| EA029: ANC Fineness Factor | ---- | 0.5 | - | <0.5 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |



| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|-------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA033-A: Actual Acidity (QCLot: 2151277) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 100 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 89.8 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2151277) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 95.9 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES (QCLot: 2148804) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 91.3 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 89.4 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 89.8 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 90.0 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 101 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 97.6 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 96.9 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 82.4 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 92.2 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 93.2 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2148803) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 89.1 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2147780) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 79.7 | 75 | 112 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2147781) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 78.4 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148151) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 92.5 | 80 | 107 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148152) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 98.9 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2147783) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 92.5 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2147728) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 115 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2146527) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 81.5 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 78.5 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 76.4 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 75.6 | 66 | 115 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2146527) - continued | | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 85.9 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 76.3 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2146527) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 84.2 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2146527) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 86.3 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 77.6 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 82.5 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 80.8 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 80.8 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 79.6 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 79.8 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 76.8 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 83.3 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 77.9 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 85.1 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 77.0 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 83.1 | 71 | 118 |
| EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.7 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 74.6 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 84.3 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 77.7 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 79.9 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 75.9 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2147725) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 118 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 117 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2.6 mg/kg | 96.5 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 128 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 119 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 121 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 65 | 124 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 5.2 mg/kg | 103 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 101 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2147725) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2.6 mg/kg | 98.1 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 125 | 65 | 126 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2147725) - continued | | | | | | | | |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 5.2 mg/kg | 95.7 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 104 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 113 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 139 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 114 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 118 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 107 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 98.2 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147725) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2.6 mg/kg | 95.6 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2.6 mg/kg | 105 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 117 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2.6 mg/kg | 99.5 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 117 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 61.2 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 113 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 112 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 127 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 5.2 mg/kg | 110 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 122 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2.6 mg/kg | 114 | 72 | 134 |
| EP075-EM: Dibenzo(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2.6 mg/kg | 118 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2.6 mg/kg | 117 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2147725) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 122 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 103 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 128 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 126 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 128 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 117 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 114 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 99.0 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 105 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 106 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2.6 mg/kg | 111 | 64 | 137 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 106 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 119 | 72 | 132 |

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2147688) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 94.4 | 84 | 116 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2147690) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 101 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 94.2 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 98.3 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.3 | 83 | 105 |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.4 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 103 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 99.4 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 98.2 | 83 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 102 | 85 | 109 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2147689) | | | | | | | | |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2147689) - continued | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 93.9 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2146936) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 109 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148063) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 99.8 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2150179) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 99.0 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2150300) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 80.6 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2147835) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 86.8 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2147835) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 66.5 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 72.7 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 89.2 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 75.2 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 80.4 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 73.3 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 68.7 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 88.0 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 76.9 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 91.2 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 75.7 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 83.0 | 76 | 112 |
| EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 95.6 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 77.4 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2147835) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 83.7 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 83.4 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 85.7 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 80.6 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2147835) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 81.0 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2150299) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 92.7 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 111 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 97.6 | 53 | 117 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2150299) - continued | | | | | | | | |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 105 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 100 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 99.3 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 106 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 102 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 104 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 97.5 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | 5 µg/L | 97.0 | 56 | 131 |
| | 205-82-3 | | | | | | | |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 99.8 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 98.2 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 97.6 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 99.1 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 100 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2146988) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 93.8 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 107 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 120 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 109 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 124 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 124 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 20 µg/L | 116 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 2 | µg/L | <2 | 30 µg/L | 117 | 53 | 125 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 121 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2146988) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 4 | µg/L | <4 | 10 µg/L | 44.7 | 18 | 51 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | 10 µg/L | 90.2 | 49 | 106 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | 20 µg/L | 83.0 | 41 | 91 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | 10 µg/L | 112 | 48 | 120 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | 10 µg/L | 104 | 47 | 128 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | 60 µg/L | 102 | 41 | 130 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | 60 µg/L | 42.7 | 19 | 49 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | 60 µg/L | 93.2 | 47 | 126 |
| EP075-EM: Dinoseb | 88-85-7 | 50 | µg/L | <50 | 60 µg/L | 118 | 49 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | 50 µg/L | 125 | 61 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2146988) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 10 µg/L | 115 | 57 | 126 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EP075I: Organochlorine Pesticides (QCLot: 2146988) - continued | | | | | | | | |
| EP075-EM: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 123 | 62 | 134 |
| EP075-EM: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 108 | 58 | 133 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 116 | 60 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 114 | 59 | 132 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 124 | 61 | 137 |
| EP075-EM: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 10 µg/L | 114 | 59 | 130 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 135 | 59 | 135 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | 10 µg/L | # 140 | 59 | 128 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147836) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 90.2 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2150298) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 54.9 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 63.5 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 63.0 | 55 | 130 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2147836) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 90.3 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2150298) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 57.6 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 64.1 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 63.8 | 53 | 136 |
| EP080: BTEXN (QCLot: 2147836) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 93.0 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 92.3 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 91.3 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 92.2 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 95.9 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 103 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------------|------------------|------------|--------------------------|--------------------------|---------------------|------|
| | | | | Spike
Concentration | Spike Recovery (%)
MS | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | | | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2148804) | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 84.2 | 78 | 124 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2148804) - continued | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 91.9 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 97.2 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 93.9 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 85.1 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 93.5 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 80.4 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 92.1 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2148803) | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 86.1 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2147780) | | | | | | | |
| EM1900529-003 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | 94.6 | 58 | 114 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2147781) | | | | | | | |
| EM1900641-025 | CPT142_BH54_180119_0.2 | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | # 41.0 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148151) | | | | | | | |
| EM1900529-003 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 101 | 77 | 113 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148152) | | | | | | | |
| EM1900641-025 | CPT142_BH54_180119_0.2 | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 106 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2147783) | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 102 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2147728) | | | | | | | |
| EM1900641-026 | CPT142_BH54_180119_0.5 | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 123 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2146527) | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 73.7 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 74.8 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2146527) | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 67.8 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 65.8 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 78.4 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2147725) | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 117 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 126 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 51.4 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2147725) | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 130 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 79.1 | 13 | 129 |



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------------|-------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147725) | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 103 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 100 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2146527) | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 80.7 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147727) | | | | | | | |
| EM1900641-025 | CPT142_BH54_180119_0.2 | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 98.4 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 106 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 103 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2146527) | | | | | | | |
| EM1900641-002 | CPT091_BH34_180119_0.5 | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 77.2 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2147727) | | | | | | | |
| EM1900641-025 | CPT142_BH54_180119_0.2 | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 105 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 106 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 93.3 | 44 | 126 |
| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2147690) | | | | | | | |
| EM1900641-029 | CPT_QC315_180119 | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 101 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 101 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 102 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 94.2 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 105 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 108 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2147689) | | | | | | | |
| EM1900649-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 87.2 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2146936) | | | | | | | |
| EM1900656-019 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 109 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148063) | | | | | | | |
| EM1900533-024 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 93.6 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2150179) | | | | | | | |
| EM1900641-029 | CPT_QC315_180119 | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 96.4 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2147835) | | | | | | | |
| EM1900656-019 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 79.9 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 76.0 | 54 | 126 |

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 Work Order : EM1900641
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2147835) | | | | | | | |
| EM1900656-019 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 82.6 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147836) | | | | | | | |
| EM1900656-019 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 68.0 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2147836) | | | | | | | |
| EM1900656-019 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 67.9 | 44 | 122 |
| EP080: BTEXN (QCLot: 2147836) | | | | | | | |
| EM1900656-019 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 86.6 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 87.3 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1900641**

Page : 1 of 14

Client : **AECOM Australia Pty Ltd**

Laboratory : Environmental Division Melbourne

Contact : [REDACTED]

Telephone : +6138549 9645

Project : 60592634

Date Samples Received : 18-Jan-2019

Site : ----

Issue Date : 24-Jan-2019

Sampler : SM

No. of samples received : 33

Order number :

No. of samples analysed : 17

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank** value outliers occur.
- **NO Duplicate** outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------------|---------------------|------------|--------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2147725-001 | ---- | Endrin | 72-20-8 | 37.0 % | 55-148% | Recovery less than lower control limit |
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | EM1900641--025 | CPT142_BH54_180119_0.2 | Hexavalent Chromium | 18540-29-9 | 41.0 % | 58-114% | Recovery less than lower data quality objective |

Matrix: **WATER**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|----------|------------|-------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2146988-001 | ---- | 4,4'-DDT | 50-29-3 | 140 % | 59-128% | Recovery greater than upper control limit |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
CPT_QC315_180119 | ---- | ---- | ---- | 23-Jan-2019 | 18-Jan-2019 | 5 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| Semivolatile Organic Compounds - Waste Classification | 0 | 6 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 8 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 7 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 6 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 7 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 23-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 23-Jan-2019 | ✓ |
| EA029-A: pH Measurements | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT091_BH34_180119_1.0, | CPT091_BH34_180119_2.0 | 18-Jan-2019 | 24-Jan-2019 | 13-Oct-2021 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-B: Acidity Trail | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT091_BH34_180119_1.0, | CPT091_BH34_180119_2.0 | 18-Jan-2019 | 24-Jan-2019 | 13-Oct-2021 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-C: Sulfur Trail | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT091_BH34_180119_1.0, | CPT091_BH34_180119_2.0 | 18-Jan-2019 | 24-Jan-2019 | 13-Oct-2021 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-D: Calcium Values | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT091_BH34_180119_1.0, | CPT091_BH34_180119_2.0 | 18-Jan-2019 | 24-Jan-2019 | 13-Oct-2021 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-E: Magnesium Values | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT091_BH34_180119_1.0, | CPT091_BH34_180119_2.0 | 18-Jan-2019 | 24-Jan-2019 | 13-Oct-2021 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-F: Excess Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT091_BH34_180119_1.0, | CPT091_BH34_180119_2.0 | 18-Jan-2019 | 24-Jan-2019 | 13-Oct-2021 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-G: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT091_BH34_180119_1.0, | CPT091_BH34_180119_2.0 | 18-Jan-2019 | 24-Jan-2019 | 13-Oct-2021 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA029-H: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT091_BH34_180119_1.0, | CPT091_BH34_180119_2.0 | 18-Jan-2019 | 24-Jan-2019 | 13-Oct-2021 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA033)
CPT091_BH220_180119_0.5,
CPT091_BH221_180119_0.5,
CPT091_BH222_180119_0.5,
CPT142_BH54_180119_0.2, | CPT091_BH220_180119_1.5,
CPT091_BH221_180119_1.5,
CPT091_BH222_180119_1.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 24-Jan-2019 | 18-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA033)
CPT091_BH220_180119_0.5,
CPT091_BH221_180119_0.5,
CPT091_BH222_180119_0.5,
CPT142_BH54_180119_0.2, | CPT091_BH220_180119_1.5,
CPT091_BH221_180119_1.5,
CPT091_BH222_180119_1.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 24-Jan-2019 | 18-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|--|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen (EA033)
CPT091_BH220_180119_0.5,
CPT091_BH221_180119_0.5,
CPT091_BH222_180119_0.5,
CPT142_BH54_180119_0.2, | CPT091_BH220_180119_1.5,
CPT091_BH221_180119_1.5,
CPT091_BH222_180119_1.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 24-Jan-2019 | 18-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA033)
CPT091_BH220_180119_0.5,
CPT091_BH221_180119_0.5,
CPT091_BH222_180119_0.5,
CPT142_BH54_180119_0.2, | CPT091_BH220_180119_1.5,
CPT091_BH221_180119_1.5,
CPT091_BH222_180119_1.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 24-Jan-2019 | 18-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen (EA033)
CPT091_BH220_180119_0.5,
CPT091_BH221_180119_0.5,
CPT091_BH222_180119_0.5,
CPT142_BH54_180119_0.2, | CPT091_BH220_180119_1.5,
CPT091_BH221_180119_1.5,
CPT091_BH222_180119_1.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 24-Jan-2019 | 18-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 01-Feb-2019 | ✓ |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 23-Jan-2019 | 17-Jul-2019 | ✓ | 23-Jan-2019 | 17-Jul-2019 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 23-Jan-2019 | 15-Feb-2019 | ✓ | 24-Jan-2019 | 15-Feb-2019 | ✓ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 22-Jan-2019 | 15-Feb-2019 | ✓ | 23-Jan-2019 | 29-Jan-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 05-Feb-2019 | ✓ |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 22-Jan-2019 | 15-Feb-2019 | ✓ | 23-Jan-2019 | 15-Feb-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 21-Jan-2019 | 25-Jan-2019 | ✓ | 22-Jan-2019 | 25-Jan-2019 | ✓ |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 21-Jan-2019 | 25-Jan-2019 | ✓ | 22-Jan-2019 | 25-Jan-2019 | ✓ |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 21-Jan-2019 | 25-Jan-2019 | ✓ | 22-Jan-2019 | 25-Jan-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 21-Jan-2019 | 25-Jan-2019 | ✓ | 22-Jan-2019 | 25-Jan-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|---|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 21-Jan-2019 | 25-Jan-2019 | ✔ | 22-Jan-2019 | 25-Jan-2019 | ✔ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT091_BH34_180119_0.2,
CPT142_BH54_180119_0.2, | CPT091_BH34_180119_0.5,
CPT142_BH54_180119_0.5 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
CPT_QC315_180119 | 18-Jan-2019 | ---- | ---- | ---- | 23-Jan-2019 | 18-Jan-2019 | ✖ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Natural (EG020B-F)
CPT_QC315_180119 | 18-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 17-Jul-2019 | ✔ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Natural (EG035F)
CPT_QC315_180119 | 18-Jan-2019 | ---- | ---- | ---- | 24-Jan-2019 | 15-Feb-2019 | ✔ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Opaque plastic bottle - NaOH (EG050F)
CPT_QC315_180119 | 18-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 15-Feb-2019 | ✔ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| Opaque plastic bottle - NaOH (EK026SF)
CPT_QC315_180119 | 18-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 01-Feb-2019 | ✔ |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
CPT_QC315_180119 | 18-Jan-2019 | ---- | ---- | ---- | 23-Jan-2019 | 15-Feb-2019 | ✔ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
CPT_QC315_180119 | 18-Jan-2019 | 23-Jan-2019 | 25-Jan-2019 | ✔ | 23-Jan-2019 | 04-Mar-2019 | ✔ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC315_180119 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✔ | 22-Jan-2019 | 01-Feb-2019 | ✔ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC315_180119 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✔ | 22-Jan-2019 | 01-Feb-2019 | ✔ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC315_180119 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✔ | 22-Jan-2019 | 01-Feb-2019 | ✔ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---------------------------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP074G: Trihalomethanes | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC315_180119 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 22-Jan-2019 | 01-Feb-2019 | ✓ | |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
CPT_QC315_180119 | 18-Jan-2019 | 23-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC315_180119 | 18-Jan-2019 | 22-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC315_180119 | 18-Jan-2019 | 22-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC315_180119 | 18-Jan-2019 | 22-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC315_180119 | 18-Jan-2019 | 23-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ | |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC315_180119,
CPT_QC530,
CPT_QC529 | CPT_QC415_180119,
CPT_QC528, | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 22-Jan-2019 | 01-Feb-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC315_180119 | | 18-Jan-2019 | 23-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC315_180119,
CPT_QC530,
CPT_QC529 | CPT_QC415_180119,
CPT_QC528, | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 22-Jan-2019 | 01-Feb-2019 | ✓ |
| EP080: BTEXN | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC315_180119,
CPT_QC530,
CPT_QC529 | CPT_QC415_180119,
CPT_QC528, | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 22-Jan-2019 | 01-Feb-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 11 | 18.18 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 11 | 18.18 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 4 | 25.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 11 | 18.18 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 14 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 11 | 18.18 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 10 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 10 | 10.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Total Mercury by FIMS | EG035T | 1 | 14 | 7.14 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 10 | 10.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 40 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 40 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 14 | 7.14 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 10 | 10.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 2 | 19 | 10.53 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 5 | 20.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 6 | 16.67 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 2 | 11 | 18.18 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 8 | 12.50 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 7 | 14.29 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 6 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 14 | 14.29 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 7 | 14.29 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 9 | 11.11 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 6 | 16.67 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 5 | 20.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 6 | 16.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 8 | 12.50 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 7 | 14.29 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 8 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 7 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 6 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 7 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|---------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | SOIL | In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|---|
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |

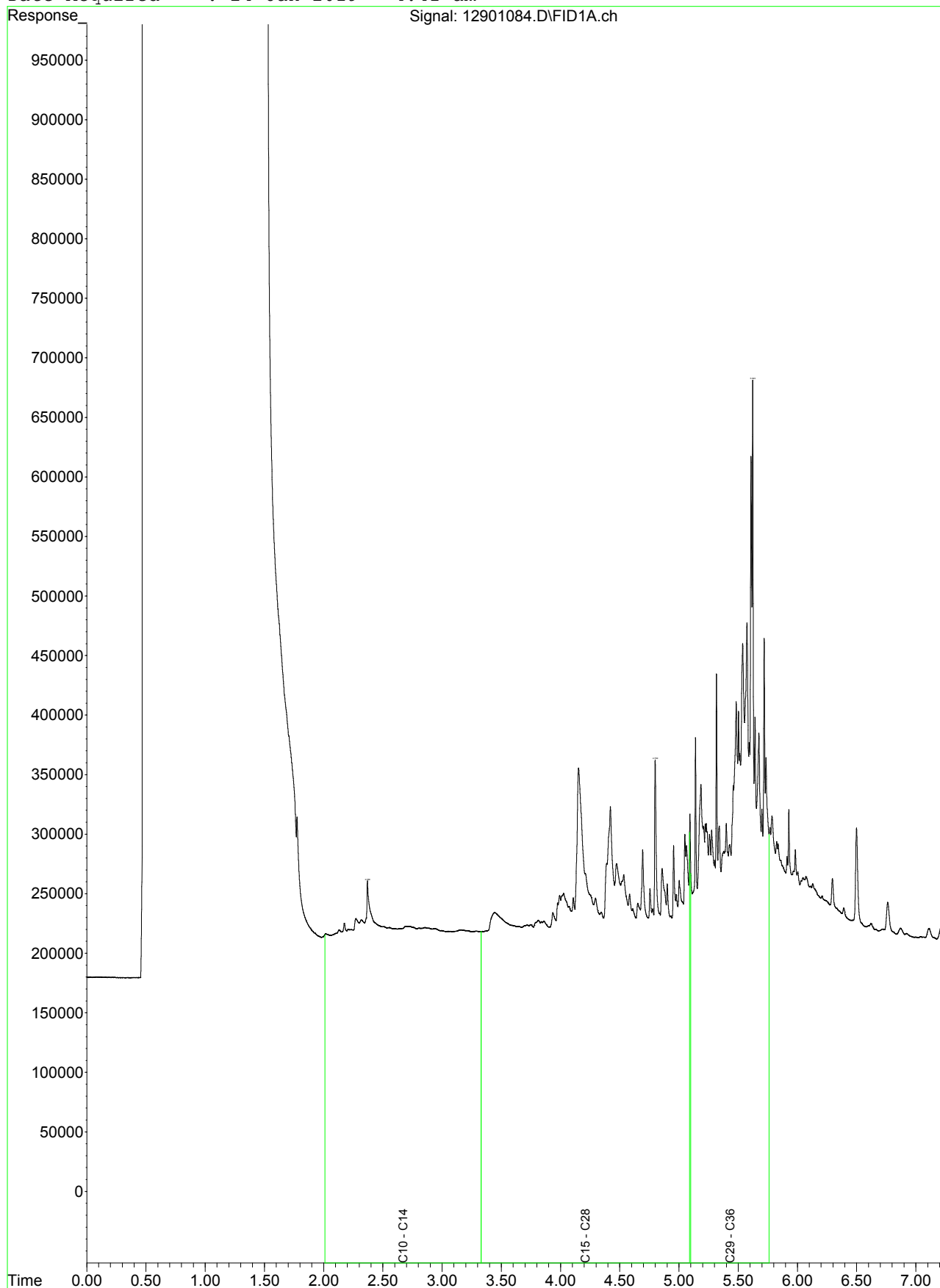


| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Preparation Methods | Method | Matrix | Method Descriptions |
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl2 extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |

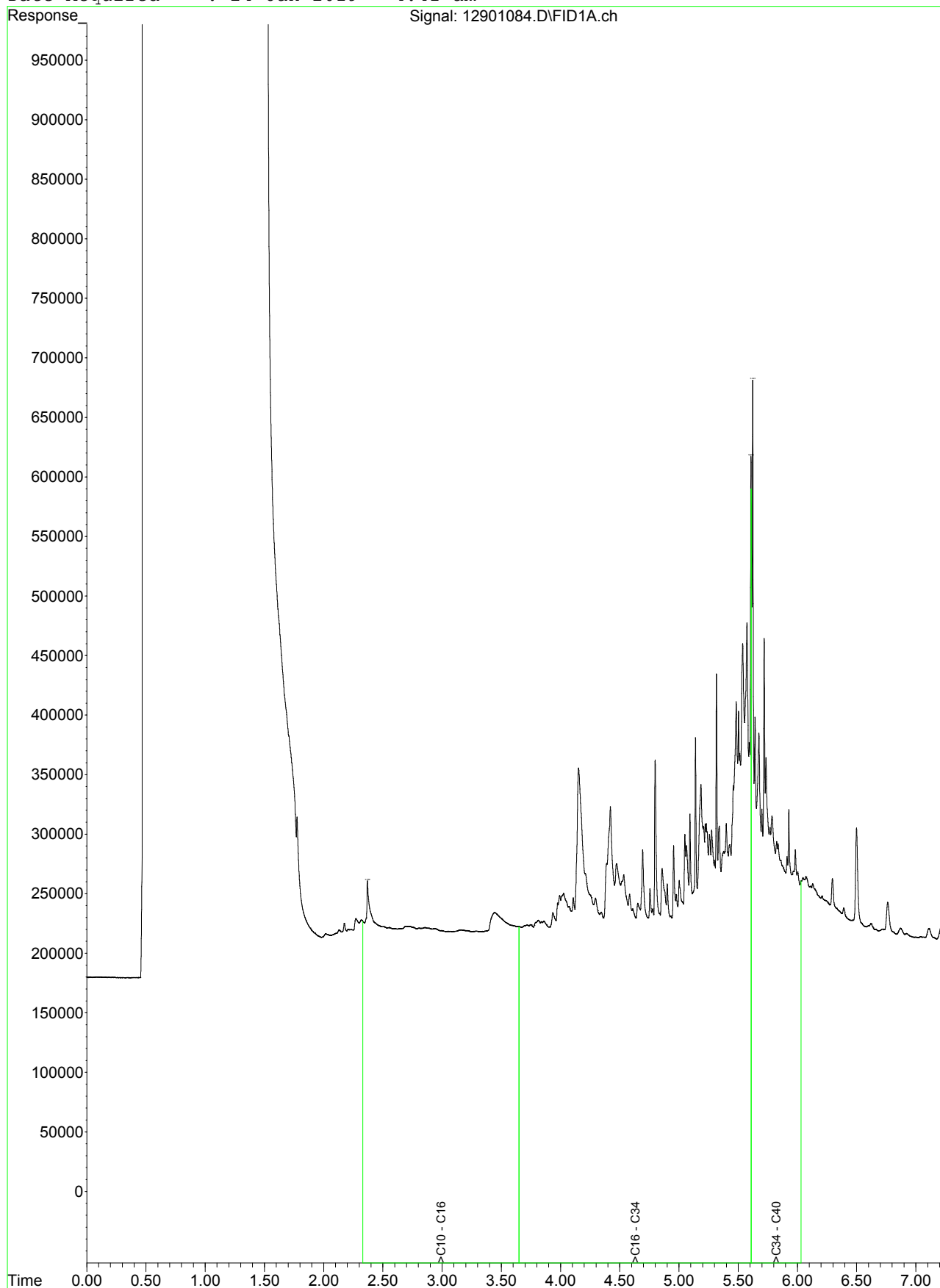


| Preparation Methods | Method | Matrix | Method Descriptions |
|--|----------|--------|---|
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

Fraction Scheme : Legacy Fractions
Data File : 12901084.D
Laboratory Number: EM1900641-001
Sample ID : CPT091_BH34_180119_0.2
Date Acquired : 24 Jan 2019 4:41 am



Fraction Scheme : NEPM Fractions
Data File : 12901084.D
Laboratory Number: EM1900641-001
Sample ID : CPT091_BH34_180119_0.2
Date Acquired : 24 Jan 2019 4:41 am



ANZ FQM - Generic Chain of Custody Form

| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: Poppy | | Destination Laboratory | |
|--|-----------|--|-----------------------|--|-------------|------------------------|--|
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GIJPP) EES | | MOBILE: [REDACTED] | | PHONE: [REDACTED] | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: [REDACTED] | | ALS | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
FOR LABORATORY USE ONLY:
COOLER SEAL (Gaseous/Water): No (N/A)
SAMPLE TEMPERATURE: CHILLED? Yes No
No (N/A) | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W=Water) | | | CONTAINER INFORMATION | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| CP126A-BH48-0.0 | S | 18/1/19 | 9:15 | 1X JAR, 1X ASS | 2 | | |
| CP126A-BH48-0.5 | S | | 9:25 | | | | |
| CP126A-BH48-1.0 | S | | 9:30 | | | | |
| CP126A-BH48-1.5 | S | | 9:45 | | | | |
| CP126A-BH48-2.0 | S | | 9:55 | | | | |
| CP126A-BH48-2.5 | S | | 10 AM | | | | |
| CP126C-BH49-0.0 | S | | 10:45 | 1X JAR, 1X ASS | 2 | | |
| CP126C-BH49-0.5 | S | | 10:50 | | | | |
| CP126C-BH49-1.0 | S | | 10:55 | | | | |
| CP126C-BH49-1.5 | S | | 11 AM | | | | |
| CP126C-BH49-2.0 | S | | 11:10 | | | | |
| CP126C-BH49-2.5 | S | | 12:45 | | | | |
| CP131-BH51-0.0 | S | | 12:50 | 1X JAR, 1X ASS | 2 | | |
| CP131-BH51-0.5 | S | | 13:00 | | | | |
| CP131-BH51-1.0 | S | | 13:05 | | | | |
| CP131-BH51-1.5 | S | | 13:10 | | | | |
| CP131-BH51-2.0 | S | | 13:15 | | | | |
| CP131-BH51-2.5 | S | | | | | | |

Environmental Division
 Melbourne
 Work Order Reference
EM1900656



Telephone: +61-3-8549 9800

RECEIVED BY: [REDACTED]
 Date: 18/1/19
 Time: 16:00
 Name: [REDACTED]
 Cont Note No:
 Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic;
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.
 Self Container Codes: Jar = Unpreserved glass jar

COC Page of

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

[illegible]

URGENT

AECOM

Q4AN(EV)-007-FM1

ANZ
FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|--------------------|-------------------|---------|--|----------------|------------------------|--|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: POPPY | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: | | MOBILE: | | ALS | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be linked to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | | | | | | |
| COOLER REQUIRED (Yes/No): | | | | | | | |
| SAMPLE TEMPERATURE: | | | | | | | |
| CHILLED: Yes/No | | | | | | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | | | |
| CONTAINER INFORMATION | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | APT126A-BH48-0.0 S | S | 18/1/19 | 9:15 | 1X AAR, 1X ASS | 2 | |
| 2 | APT126A-BH48-0.5 S | S | | 9:25 | | | |
| 3 | APT126A-BH48-1.0 S | S | | 9:30 | | | |
| 4 | APT126A-BH48-1.5 S | S | | 9:45 | | | |
| 5 | APT126A-BH48-2.0 S | S | | 9:55 | | | |
| 6 | APT126A-BH48-2.5 S | S | | 10 AM | | | |
| 7 | APT126C-BH49-0.0 S | S | | 10:45 | 1X AAR, 1X ASS | 2 | |
| 8 | APT126C-BH49-0.5 S | S | | 10:50 | | | |
| 9 | APT126C-BH49-1.0 S | S | | 10:55 | | | |
| 10 | APT126C-BH49-1.5 S | S | | 11 AM | | | |
| 11 | APT126C-BH49-2.0 S | S | | 11:10 | | | |
| 12 | APT131-BH51-0.0 S | S | | 12:45 | | | |
| 13 | APT131-BH51-0.5 S | S | | 12:50 | 1X AAR, 1X ASS | 2 | |
| 14 | APT131-BH51-1.0 S | S | | 13:00 | | | |
| 15 | APT131-BH51-1.5 S | S | | 13:05 | | | |
| 16 | APT131-BH51-2.0 S | S | | 13:10 | | | |
| 17 | APT131-BH51-2.5 S | S | | 13:15 | | | |

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for OC or trace LORs etc.

Environmental Division Melbourne
Work Order Reference
EM1900656

Barcode: [Barcode]

Telephone: +61-3-8548 9800

RECEIVED BY: **POPPY** Date: **18/1/19** Time: **16:06 PM**
Name: **Scott** Date: **18/1/19** Time: **6:00 PM**
Of: **AECOM** Of: **ALS**

METHOD OF PREPARATION: **Forwarded to Secondary Lab**
COC Page **2** of **11**

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide/Cd Preserved; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Specimen bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

FQM - Generic Chain of Custody Form

| | | | | | | | |
|---|--|--|--|--|--|------------------------|--|
| CONSULTANT: ALCOM | | ADDRESS / OFFICE: | | SAMPLER: 6094 | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GLJPP) EES | | MOBILE: | | PHONE: | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |

| | | | |
|--|--|--|--|
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | |
| | | | |
| | | | |
| | | | |

| SAMPLE INFORMATION (note S = Soil, W = Water) | | | CONTAINER INFORMATION | |
|---|---------------|--------|-----------------------|----------|
| ALS ID | SAMPLE ID | MATRIX | DATE | Time |
| 18 | QC154-180119 | S | 18/01/19 | 9:45 AM |
| 19 | QC254-180119 | S | 18/01/19 | 10:55 AM |
| 20 | QC354-180119 | S | 18/01/19 | 11:30 AM |
| 21 | QC454-180119 | W | 18/01/19 | 11:30 AM |
| 22 | QC554-180119 | W | 18/01/19 | 11:30 AM |
| 23 | QC654-180119 | W | 18/01/19 | 11:30 AM |
| 24 | QC754-180119 | W | 18/01/19 | 11:30 AM |
| 25 | QC854-180119 | W | 18/01/19 | 11:30 AM |
| 26 | QC954-180119 | W | 18/01/19 | 11:30 AM |
| 27 | QC1054-180119 | W | 18/01/19 | 11:30 AM |
| 28 | QC1154-180119 | W | 18/01/19 | 11:30 AM |
| 29 | QC1254-180119 | W | 18/01/19 | 11:30 AM |
| 30 | QC1354-180119 | W | 18/01/19 | 11:30 AM |
| 31 | QC1454-180119 | W | 18/01/19 | 11:30 AM |
| 32 | QC1554-180119 | W | 18/01/19 | 11:30 AM |
| 33 | QC1654-180119 | W | 18/01/19 | 11:30 AM |
| 34 | QC1754-180119 | W | 18/01/19 | 11:30 AM |
| 35 | QC1854-180119 | W | 18/01/19 | 11:30 AM |
| 36 | QC1954-180119 | W | 18/01/19 | 11:30 AM |
| 37 | QC2054-180119 | W | 18/01/19 | 11:30 AM |
| 38 | QC2154-180119 | W | 18/01/19 | 11:30 AM |
| 39 | QC2254-180119 | W | 18/01/19 | 11:30 AM |
| 40 | QC2354-180119 | W | 18/01/19 | 11:30 AM |
| 41 | QC2454-180119 | W | 18/01/19 | 11:30 AM |
| 42 | QC2554-180119 | W | 18/01/19 | 11:30 AM |
| 43 | QC2654-180119 | W | 18/01/19 | 11:30 AM |
| 44 | QC2754-180119 | W | 18/01/19 | 11:30 AM |
| 45 | QC2854-180119 | W | 18/01/19 | 11:30 AM |
| 46 | QC2954-180119 | W | 18/01/19 | 11:30 AM |
| 47 | QC3054-180119 | W | 18/01/19 | 11:30 AM |
| 48 | QC3154-180119 | W | 18/01/19 | 11:30 AM |
| 49 | QC3254-180119 | W | 18/01/19 | 11:30 AM |
| 50 | QC3354-180119 | W | 18/01/19 | 11:30 AM |
| 51 | QC3454-180119 | W | 18/01/19 | 11:30 AM |
| 52 | QC3554-180119 | W | 18/01/19 | 11:30 AM |
| 53 | QC3654-180119 | W | 18/01/19 | 11:30 AM |
| 54 | QC3754-180119 | W | 18/01/19 | 11:30 AM |
| 55 | QC3854-180119 | W | 18/01/19 | 11:30 AM |
| 56 | QC3954-180119 | W | 18/01/19 | 11:30 AM |
| 57 | QC4054-180119 | W | 18/01/19 | 11:30 AM |
| 58 | QC4154-180119 | W | 18/01/19 | 11:30 AM |
| 59 | QC4254-180119 | W | 18/01/19 | 11:30 AM |
| 60 | QC4354-180119 | W | 18/01/19 | 11:30 AM |
| 61 | QC4454-180119 | W | 18/01/19 | 11:30 AM |
| 62 | QC4554-180119 | W | 18/01/19 | 11:30 AM |
| 63 | QC4654-180119 | W | 18/01/19 | 11:30 AM |
| 64 | QC4754-180119 | W | 18/01/19 | 11:30 AM |
| 65 | QC4854-180119 | W | 18/01/19 | 11:30 AM |
| 66 | QC4954-180119 | W | 18/01/19 | 11:30 AM |
| 67 | QC5054-180119 | W | 18/01/19 | 11:30 AM |
| 68 | QC5154-180119 | W | 18/01/19 | 11:30 AM |
| 69 | QC5254-180119 | W | 18/01/19 | 11:30 AM |
| 70 | QC5354-180119 | W | 18/01/19 | 11:30 AM |
| 71 | QC5454-180119 | W | 18 | |

COC Page of

From: [REDACTED]@aecom.com>
Sent: Monday, 21 January 2019 2:45 PM
To: [REDACTED]
Subject: RE: On Hold - EM1900656 - AECOMAU (60592634)

Hi [REDACTED]

Please analyse:

| | | |
|----|---|-------|
| 1 | CPT126A_BH48_180119_0.0 = IWRG621 | |
| 4 | CPT126A_BH48_180119_1.5 = IWRG621 | |
| 4 | CPT126A_BH48_180119_0.0 = IWRG621 | BH 49 |
| 9 | CTP126C_BH49_180119_1.0 = IWRG621 | |
| 13 | CPT131-A_BH51_180119_0.0 = IWRG621 | |
| 13 | CPT131-A_BH51_180119_0.5 = IWRG621 | |
| 3 | CPT126A_BH48_180119_1.0 = Chromium Suite (EA033) | |
| 3 | CPT126A_BH48_180119_2.0 = Chromium Suite (EA033) | |
| 5 | CPT126A_BH48_180119_0.5 = Chromium Suite (EA033) | BH 49 |
| 8 | CPT126A_BH48_180119_1.5 = Chromium Suite (EA033) | BH 49 |
| 10 | CPT131-A_BH51_180119_0.5 = Chromium Suite (EA033) | |
| 13 | CPT131-A_BH51_180119_1.5 = Chromium Suite (EA033) | |
| 15 | QC154_180119 = IWRG621 | |
| 18 | QC254_180119 = IWRG621 (Triplicate, please forward to Eurofins) | |
| → | QC354_180119 = IWRG621 water equivalent | |
| 19 | QC454_180119 = TPH(C6-C9)/BTEXN | |
| 20 | QC559_180119 = TPH(C6-C9)/BTEXN | |
| 21 | QC560_180119 = TPH(C6-C9)/BTEXN | |
| 22 | | |

At 3 days TAT. Thanks!

Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

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From: [REDACTED]@alsglobal.com]
Sent: Monday, 21 January 2019 10:33 AM
To: [REDACTED]
Subject: On Hold - EM1900656 - AECOMAU (60592634)

Hi [REDACTED]

Please see attached samples received without analysis.

Thanks

URGENT

AECOM

Q4AN(EV)-007-FM1

ANZ
FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|--------------------|--|---------|--|----------------|------------------------|--|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: PAPPY | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GUPP) EES | | MOBILE: | | PHONE: | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | ALS | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY: | | | | | | | |
| COOLER SEAL (to be approved): | | | | | | | |
| Initials: Yes No NA | | | | | | | |
| SAMPLE TEMPERATURE: | | | | | | | |
| CHILLED: Yes No | | | | | | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | | | |
| CONTAINER INFORMATION | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | CPT126A-BH48-0.0 S | | 18/1/19 | 9:15 | 1X JAR, 1X ASS | 2 | |
| 2 | CPT126A-BH48-0.5 S | | | 9:25 | | | |
| 3 | CPT126A-BH48-1.0 S | | | 9:30 | | | |
| 4 | CPT126A-BH48-1.5 S | | | 9:45 | | | |
| 5 | CPT126A-BH48-2.0 S | | | 9:55 | | | |
| 6 | CPT126A-BH48-2.5 S | | | 10 AM | | | |
| 7 | CPT126C-BH49-0.0 S | | | 10:45 | 1X JAR, 1X ASS | 2 | |
| 8 | CPT126C-BH49-0.5 S | | | 10:50 | | | |
| 9 | CPT126C-BH49-1.0 S | | | 10:55 | | | |
| 10 | CPT126C-BH49-1.5 S | | | 11 AM | | | |
| 11 | CPT126C-BH49-2.0 S | | | 11:10 | | | |
| 12 | CPT131-BH51-0.0 S | | | 12:45 | | | |
| 13 | CPT131-BH51-0.5 S | | | 12:50 | 1X JAR, 1X ASS | 2 | |
| 14 | CPT131-BH51-1.0 S | | | 13:00 | | | |
| 15 | CPT131-BH51-1.5 S | | | 13:05 | | | |
| 16 | CPT131-BH51-2.0 S | | | 13:10 | | | |
| 17 | CPT131-BH51-2.5 S | | | 13:15 | | | |

Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc.

Environmental Division
Melbourne
Work Order Reference
EM1900656

Barcode: [Barcode]

Telephone: + 61-3-8549 9800

RECEIVED BY: [Signature] Name: [Name] Date: [Date] Time: [Time]

RECEIVED BY: [Signature] Name: [Name] Date: [Date] Time: [Time]

Forwarded to: [Signature] Name: [Name] Date: [Date] Time: [Time]

Secondary Lab: [Signature] Name: [Name] Date: [Date] Time: [Time]

Initials: [Initials] Date: [Date]

COC Page of

ANZ
FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|--------------|---|----------|------------------------------------|------------------|---|--|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: Barry | | Destination Laboratory | |
| PROJECT MANAGER (PM): [REDACTED] | | SITE: Gas Import Jetty Pipeline Project (GUPP) EES | | MOBILE: [REDACTED] | | PHONE: [REDACTED] | |
| PROJECT NUMBER & TASK CODE: 00500044-60592634 | | P.O. NO.: | | EMAIL REPORT TO: [REDACTED] | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite price) | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | | | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
FOR LABORATORY USE ONLY:
COOLER SEAL (date appropriate):
(date) Yes No N/A
SAMPLE TEMPERATURE:
CHILLED: Yes No | | | | | | | |
| CONTAINER INFORMATION | | | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 18 | QC154-100117 | S | 10/11/17 | 9:45 AM | DATA A.A.S.S. 2. | 2 | |
| 19 | QC254-100119 | S | 10/11/17 | 10:55 AM | DATA A.A.S.S. 3 | 3 | |
| 20 | QC354-100119 | S | 10/11/17 | 11:30 AM | DATA A.A.S.S. 9 | 9 | |
| 21 | QC454-100117 | W | 10/11/17 | 11:30 AM | 2x purples 2 | 2 | |
| 22 | QC559-100119 | W | 10/11/17 | 11:30 AM | 1 | 1 | |
| 23 | QC560-100119 | W | 10/11/17 | 11:30 AM | 1 | 1 | |
| Extra Samples | | | | | | | |
| 23 | CPT26L-BM49 | 2x5 | | | | 2 | |
| Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | | | | | | | |
| RECEIVED BY: Scott Name: Scott Date: 18/11/19 Time: 16:00
RECEIVED BY: ALS Name: ALS Date: 18/11/19 Time: 16:00
METHOD OF SHIPMENT: Cont Note No:
Transport Co: | | | | | | | |
| Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Plastic; HS = HCl preserved Plastic; HS = HCl preserved Plastic; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. | | | | | | | |

COC Page of

From: [REDACTED]@aecom.com>
Sent: Monday, 21 January 2019 2:45 PM
To: [REDACTED]
Subject: RE: On Hold - EM1900656 - AECOMAU (60592634)

Hi [REDACTED]

Please analyse:

| | | |
|----|---|-------|
| 1 | CPT126A_BH48_180119_0.0 = IWRG621 | |
| 4 | CPT126A_BH48_180119_1.5 = IWRG621 | |
| 4 | CPT126A_BH48_180119_0.0 = IWRG621 | BH 49 |
| 9 | CTP126C_BH49_180119_1.0 = IWRG621 | |
| 12 | CPT131-A_BH51_180119_0.0 = IWRG621 | |
| 13 | CPT131-A_BH51_180119_0.5 = IWRG621 | |
| 3 | CPT126A_BH48_180119_1.0 = Chromium Suite (EA033) | |
| 5 | CPT126A_BH48_180119_2.0 = Chromium Suite (EA033) | |
| 8 | CPT126A_BH48_180119_0.5 = Chromium Suite (EA033) | BH 49 |
| 10 | CPT126A_BH48_180119_1.5 = Chromium Suite (EA033) | BH 49 |
| 13 | CPT131-A_BH51_180119_0.5 = Chromium Suite (EA033) | |
| 15 | CPT131-A_BH51_180119_1.5 = Chromium Suite (EA033) | |
| 18 | QC154_180119 = IWRG621 | |
| → | QC254_180119 = IWRG621 (Triplicate, please forward to Eurofins) | |
| 19 | QC354_180119 = IWRG621 water equivalent | |
| 20 | QC454_180119 = TPH(C6-C9)/BTEXN | |
| 21 | QC559_180119 = TPH(C6-C9)/BTEXN | |
| 22 | QC560_180119 = TPH(C6-C9)/BTEXN | |

At 3 days TAT. Thanks!

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

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From: [REDACTED]@alsglobal.com]
Sent: Monday, 21 January 2019 10:33 AM
To: [REDACTED]
Subject: On Hold - EM1900656 - AECOMAU (60592634)

Hi [REDACTED]

Please see attached samples received without analysis.

Thanks

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1900656**

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 3 |
| Order number | : ---- | Quote number | : EP2016AECOMAU0014 (EN/096/18) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : Gas Import Jetty Pipeline Project
(GIJPP) EES | | |
| Sampler | : [REDACTED] | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 18-Jan-2019 16:00 | Issue Date | : 21-Jan-2019 |
| Client Requested Due Date | : 24-Jan-2019 | Scheduled Reporting Date | : 24-Jan-2019 |

Delivery Details

| | | | |
|----------------------|-----------|------------------------------------|-----------------------|
| Mode of Delivery | : Carrier | Security Seal | : Intact. |
| No. of coolers/boxes | : 2 | Temperature | : 4.8°C - Ice present |
| Receipt Detail | : | No. of samples received / analysed | : 23 / 16 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|---|--|
| Dissolved Mercury by FIMS : EG035F | | |
| QC354_180119 | - Clear Plastic Bottle - Nitric Acid; Unspecified | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite A : EG020A-F | | |
| QC354_180119 | - Clear Plastic Bottle - Nitric Acid; Unspecified | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite B : EG020B-F | | |
| QC354_180119 | - Clear Plastic Bottle - Nitric Acid; Unspecified | - Clear Plastic Bottle - Nitric Acid; Filtered |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IMRG 621 |
|----------------------|-----------------------------|------------------|---|--|--------------------------------------|-------------------------|
| EM1900656-001 | 18-Jan-2019 09:15 | CPT126A_BH48_0.0 | | | ✓ | ✓ |
| EM1900656-002 | 18-Jan-2019 09:25 | CPT126A_BH48_0.5 | ✓ | | | |
| EM1900656-003 | 18-Jan-2019 09:30 | CPT126A_BH48_1.0 | | ✓ | | |
| EM1900656-004 | 18-Jan-2019 09:45 | CPT126A_BH48_1.5 | | | ✓ | ✓ |
| EM1900656-005 | 18-Jan-2019 09:55 | CPT126A_BH48_2.0 | | ✓ | | |
| EM1900656-006 | 18-Jan-2019 10:00 | CPT126A_BH48_2.5 | ✓ | | | |
| EM1900656-007 | 18-Jan-2019 10:45 | CPT126C_BH49_0.0 | | | ✓ | ✓ |
| EM1900656-008 | 18-Jan-2019 10:50 | CPT126C_BH49_0.5 | | ✓ | | |
| EM1900656-009 | 18-Jan-2019 10:55 | CPT126C_BH49_1.0 | | | ✓ | ✓ |
| EM1900656-010 | 18-Jan-2019 11:00 | CPT126C_BH49_1.5 | | ✓ | | |
| EM1900656-011 | 18-Jan-2019 11:10 | CPT126C_BH49_2.0 | ✓ | | | |
| EM1900656-012 | 18-Jan-2019 12:45 | CPT131_BH51_0.0 | | | ✓ | ✓ |
| EM1900656-013 | 18-Jan-2019 12:50 | CPT131_BH51_0.5 | | ✓ | ✓ | ✓ |
| EM1900656-014 | 18-Jan-2019 13:00 | CPT131_BH51_1.0 | ✓ | | | |
| EM1900656-015 | 18-Jan-2019 13:05 | CPT131_BH51_1.5 | | ✓ | | |
| EM1900656-016 | 18-Jan-2019 13:10 | CPT131_BH51_2.0 | ✓ | | | |
| EM1900656-017 | 18-Jan-2019 13:15 | CPT131_BH51_2.5 | ✓ | | | |
| EM1900656-018 | 18-Jan-2019 09:45 | QC154_180119 | | | ✓ | ✓ |
| EM1900656-023 | 18-Jan-2019 11:10 | CPT126C_BH49_2.5 | ✓ | | | |



Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------------------|
| EM1900656-019 | 18-Jan-2019 11:30 | QC354_180119 | ✓ | |
| EM1900656-020 | 18-Jan-2019 11:30 | QC454_180119 | | ✓ |
| EM1900656-021 | 18-Jan-2019 00:00 | QC559_180119 | | ✓ |
| EM1900656-022 | 18-Jan-2019 00:00 | QC560_180119 | | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

| □ □ □
Client Sample ID(s) | Container | Due for
extraction | Due for
analysis | Samples Received | | Instructions Received | |
|------------------------------|--------------------------------|-----------------------|---------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| QC354_180119 | Clear Plastic Bottle - Natural | ---- | 18-Jan-2019 | 18-Jan-2019 | ✓ | 21-Jan-2019 | ✗ |

Requested Deliverables

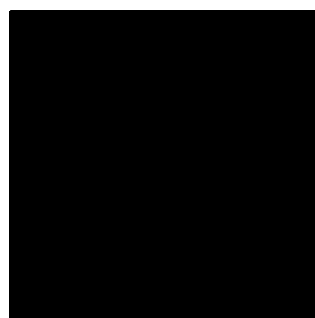
ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

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- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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CERTIFICATE OF ANALYSIS

Work Order : **EM1900656**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : [REDACTED]
Site : Gas Import Jetty Pipeline Project (GIJPP) EES
Quote number : EN/096/18
No. of samples received : 23
No. of samples analysed : 16

Page : 1 of 27
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 18-Jan-2019 16:00
Date Analysis Commenced : 21-Jan-2019
Issue Date : 24-Jan-2019 19:46



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|----------------------------------|---|
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- EG048G: EM1900641#25 Poor matrix spike recovery for hexavalent chromium due to matrix effects.
- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126A_BH48_0.0 | CPT126A_BH48_1.0 | CPT126A_BH48_1.5 | CPT126A_BH48_2.0 | CPT126C_BH49_0.0 |
|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:30 | 18-Jan-2019 09:45 | 18-Jan-2019 09:55 | 18-Jan-2019 10:45 |
| Compound | CAS Number | LOR | Unit | | EM1900656-001 | EM1900656-003 | EM1900656-004 | EM1900656-005 | EM1900656-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 5.4 | ---- | 6.5 | ---- | 5.5 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 6.2 | ---- | 6.3 | ---- |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | <2 | ---- | <2 | ---- |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | <0.02 | ---- | <0.02 | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | 0.005 | ---- | <0.005 | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | <10 | ---- | <10 | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | ---- | 1.5 | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | <0.02 | ---- | <0.02 | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | <10 | ---- | <10 | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | <1 | ---- | <1 | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | <0.02 | ---- | <0.02 | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | <10 | ---- | <10 | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | <1 | ---- | <1 | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 11.6 | ---- | 27.1 | ---- | 13.3 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | | <5 | ---- | 5 | ---- | 8 |
| Lead | 7439-92-1 | 5 | mg/kg | | 5 | ---- | 12 | ---- | 19 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | <2 | ---- | <2 | ---- | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | | 2 | ---- | 11 | ---- | 10 |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | ---- | <2 | ---- | <2 |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | | <5 | ---- | <5 | ---- | 18 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | ---- | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126A_BH48_0.0 | CPT126A_BH48_1.0 | CPT126A_BH48_1.5 | CPT126A_BH48_2.0 | CPT126C_BH49_0.0 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:30 | 18-Jan-2019 09:45 | 18-Jan-2019 09:55 | 18-Jan-2019 10:45 |
| Compound | CAS Number | LOR | Unit | | EM1900656-001 | EM1900656-003 | EM1900656-004 | EM1900656-005 | EM1900656-007 |
| | | | | | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | 1 | ---- | <1 | ---- | 2 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 80 | ---- | 320 | ---- | 110 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | ---- | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | ---- | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | ---- | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | <0.4 | ---- | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | ---- | <0.04 | ---- | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126A_BH48_0.0 | CPT126A_BH48_1.0 | CPT126A_BH48_1.5 | CPT126A_BH48_2.0 | CPT126C_BH49_0.0 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:30 | 18-Jan-2019 09:45 | 18-Jan-2019 09:55 | 18-Jan-2019 10:45 |
| Compound | CAS Number | LOR | Unit | | EM1900656-001 | EM1900656-003 | EM1900656-004 | EM1900656-005 | EM1900656-007 |
| | | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | ---- | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126A_BH48_0.0 | CPT126A_BH48_1.0 | CPT126A_BH48_1.5 | CPT126A_BH48_2.0 | CPT126C_BH49_0.0 |
|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:30 | 18-Jan-2019 09:45 | 18-Jan-2019 09:55 | 18-Jan-2019 10:45 |
| Compound | CAS Number | LOR | Unit | | EM1900656-001 | EM1900656-003 | EM1900656-004 | EM1900656-005 | EM1900656-007 |
| | | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | ---- | 0.6 | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | ---- | 1.2 | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126A_BH48_0.0 | CPT126A_BH48_1.0 | CPT126A_BH48_1.5 | CPT126A_BH48_2.0 | CPT126C_BH49_0.0 |
|--|--------------------------|-------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:30 | 18-Jan-2019 09:45 | 18-Jan-2019 09:55 | 18-Jan-2019 10:45 |
| Compound | CAS Number | LOR | Unit | | EM1900656-001 | EM1900656-003 | EM1900656-004 | EM1900656-005 | EM1900656-007 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | ---- | <10 | ---- | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | ---- | <50 | ---- | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | ---- | <10 | ---- | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | ---- | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | ---- | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | <50 | ---- | <50 | ---- | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | ---- | <50 | ---- | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | ---- | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | <50 | ---- | <50 | ---- | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | ---- | <50 | ---- | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | ---- | <10 | ---- | <10 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 115 | ---- | 105 | ---- | 106 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 70.4 | ---- | 72.8 | ---- | 72.7 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 66.8 | ---- | 73.8 | ---- | 76.1 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 80.7 | ---- | 86.2 | ---- | 84.4 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 106 | ---- | 94.1 | ---- | 109 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 107 | ---- | 96.8 | ---- | 112 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | 103 | ---- | 85.6 | ---- | 116 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT126A_BH48_0.0 | CPT126A_BH48_1.0 | CPT126A_BH48_1.5 | CPT126A_BH48_2.0 | CPT126C_BH49_0.0 |
|-----------------------------|------------|-----|------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | 18-Jan-2019 09:15 | 18-Jan-2019 09:30 | 18-Jan-2019 09:45 | 18-Jan-2019 09:55 | 18-Jan-2019 10:45 |
| Compound | CAS Number | LOR | Unit | EM1900656-001 | EM1900656-003 | EM1900656-004 | EM1900656-005 | EM1900656-007 |
| | | | | Result | Result | Result | Result | Result |

EP075T: Base/Neutral Extractable Surrogates (Waste Classification)

| | | | | | | | | |
|------------------------|-----------|-------|---|-----|------|------|------|-----|
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 110 | ---- | 102 | ---- | 119 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 103 | ---- | 94.6 | ---- | 110 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 113 | ---- | 106 | ---- | 123 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 121 | ---- | 112 | ---- | 124 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 102 | ---- | 89.6 | ---- | 112 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126C_BH49_0.5 | CPT126C_BH49_1.0 | CPT126C_BH49_1.5 | CPT131_BH51_0.0 | CPT131_BH51_0.5 |
|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 10:50 | 18-Jan-2019 10:55 | 18-Jan-2019 11:00 | 18-Jan-2019 12:45 | 18-Jan-2019 12:50 |
| Compound | CAS Number | LOR | Unit | | EM1900656-008 | EM1900656-009 | EM1900656-010 | EM1900656-012 | EM1900656-013 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | ---- | 5.7 | ---- | ---- | 4.9 | 4.4 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.0 | ---- | 4.9 | ---- | ---- | 4.7 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 23 | ---- | 19 | ---- | ---- | 30 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.04 | ---- | 0.03 | ---- | ---- | 0.05 |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | ---- | <0.005 | ---- | ---- | <0.005 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | <10 | ---- | ---- | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | ---- | 1.5 | ---- | ---- | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.04 | ---- | 0.03 | ---- | ---- | 0.05 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 23 | ---- | 19 | ---- | ---- | 30 |
| Liming Rate | ---- | 1 | kg CaCO3/t | 2 | ---- | 1 | ---- | ---- | 2 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.04 | ---- | 0.03 | ---- | ---- | 0.05 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 23 | ---- | 19 | ---- | ---- | 30 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 2 | ---- | 1 | ---- | ---- | 2 |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | ---- | 23.3 | ---- | ---- | 10.1 | 16.0 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | ---- | <5 | ---- | <5 | <5 | <5 |
| Cadmium | 7440-43-9 | 1 | mg/kg | ---- | <1 | ---- | <1 | <1 | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | ---- | 13 | ---- | 9 | 5 | 5 |
| Lead | 7439-92-1 | 5 | mg/kg | ---- | 10 | ---- | 12 | 12 | 12 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | ---- | 6 | ---- | <2 | <2 | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | ---- | 13 | ---- | 4 | 6 | 6 |
| Selenium | 7782-49-2 | 5 | mg/kg | ---- | <5 | ---- | <5 | <5 | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | ---- | <2 | ---- | <2 | <2 | <2 |
| Tin | 7440-31-5 | 5 | mg/kg | ---- | <5 | ---- | <5 | <5 | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | ---- | <5 | ---- | 22 | <5 | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | ---- | <0.1 | ---- | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126C_BH49_0.5 | CPT126C_BH49_1.0 | CPT126C_BH49_1.5 | CPT131_BH51_0.0 | CPT131_BH51_0.5 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 10:50 | 18-Jan-2019 10:55 | 18-Jan-2019 11:00 | 18-Jan-2019 12:45 | 18-Jan-2019 12:50 |
| Compound | CAS Number | LOR | Unit | | EM1900656-008 | EM1900656-009 | EM1900656-010 | EM1900656-012 | EM1900656-013 |
| | | | | Result | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | ---- | <1 | ---- | ---- | 2 | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | ---- | 240 | ---- | ---- | 90 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | ---- | <0.1 | ---- | ---- | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | ---- | <0.2 | ---- | ---- | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | ---- | <0.5 | ---- | ---- | <0.5 | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | ---- | <0.5 | ---- | ---- | <0.5 | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | ---- | <0.5 | ---- | ---- | <0.5 | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | ---- | <0.5 | ---- | ---- | <0.5 | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | ---- | <0.5 | ---- | ---- | <0.5 | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | ---- | <0.2 | ---- | ---- | <0.2 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | ---- | <0.5 | ---- | ---- | <0.5 | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | ---- | <1 | ---- | ---- | <1 | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | ---- | <0.02 | ---- | ---- | <0.02 | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | ---- | <0.01 | ---- | ---- | <0.01 | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | ---- | <0.4 | ---- | ---- | <0.4 | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | ---- | <0.02 | ---- | ---- | <0.02 | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | ---- | <0.01 | ---- | ---- | <0.01 | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | ---- | <0.02 | ---- | ---- | <0.02 | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | ---- | <0.01 | ---- | ---- | <0.01 | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | ---- | <0.01 | ---- | ---- | <0.01 | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | ---- | <0.02 | ---- | ---- | <0.02 | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | ---- | <0.02 | ---- | ---- | <0.02 | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | ---- | <0.04 | ---- | ---- | <0.04 | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | ---- | <0.02 | ---- | ---- | <0.02 | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | ---- | <0.01 | ---- | ---- | <0.01 | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | ---- | <0.02 | ---- | ---- | <0.02 | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | ---- | <0.02 | ---- | ---- | <0.02 | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | ---- | <0.02 | ---- | ---- | <0.02 | <0.02 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126C_BH49_0.5 | CPT126C_BH49_1.0 | CPT126C_BH49_1.5 | CPT131_BH51_0.0 | CPT131_BH51_0.5 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 10:50 | 18-Jan-2019 10:55 | 18-Jan-2019 11:00 | 18-Jan-2019 12:45 | 18-Jan-2019 12:50 |
| Compound | CAS Number | LOR | Unit | | EM1900656-008 | EM1900656-009 | EM1900656-010 | EM1900656-012 | EM1900656-013 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | ---- | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | ---- | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | ---- | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | ---- | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | ---- | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | ---- | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | ---- | <0.2 | ---- | <0.2 | <0.2 | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | ---- | <1 | ---- | <1 | <1 | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | ---- | <1 | ---- | <1 | <1 | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | ---- | <1 | ---- | <1 | <1 | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | ---- | <1 | ---- | <1 | <1 | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | ---- | <1 | ---- | <1 | <1 | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | ---- | <5 | ---- | <5 | <5 | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | ---- | <5 | ---- | <5 | <5 | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | ---- | <5 | ---- | <5 | <5 | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | ---- | <5 | ---- | <5 | <5 | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | ---- | <5 | ---- | <5 | <5 | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | ---- | <1 | ---- | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126C_BH49_0.5 | CPT126C_BH49_1.0 | CPT126C_BH49_1.5 | CPT131_BH51_0.0 | CPT131_BH51_0.5 |
|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 10:50 | 18-Jan-2019 10:55 | 18-Jan-2019 11:00 | 18-Jan-2019 12:45 | 18-Jan-2019 12:50 |
| Compound | CAS Number | LOR | Unit | | EM1900656-008 | EM1900656-009 | EM1900656-010 | EM1900656-012 | EM1900656-013 |
| | | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | ---- | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | ---- | 0.6 | ---- | 0.6 | 0.6 | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | ---- | 1.2 | ---- | 1.2 | 1.2 | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | ---- | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | ---- | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126C_BH49_0.5 | CPT126C_BH49_1.0 | CPT126C_BH49_1.5 | CPT131_BH51_0.0 | CPT131_BH51_0.5 |
|--|--------------------------|-------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jan-2019 10:50 | 18-Jan-2019 10:55 | 18-Jan-2019 11:00 | 18-Jan-2019 12:45 | 18-Jan-2019 12:50 |
| Compound | CAS Number | LOR | Unit | | EM1900656-008 | EM1900656-009 | EM1900656-010 | EM1900656-012 | EM1900656-013 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | ---- | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | ---- | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | ---- | <10 | ---- | <10 | <10 | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | ---- | <50 | ---- | <50 | <50 | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | ---- | <10 | ---- | <10 | <10 | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | ---- | <100 | ---- | <100 | <100 | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | ---- | <100 | ---- | <100 | <100 | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | ---- | <50 | ---- | <50 | <50 | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | ---- | <50 | ---- | <50 | <50 | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | ---- | <100 | ---- | <100 | <100 | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | ---- | <100 | ---- | <100 | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | ---- | <50 | ---- | <50 | <50 | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | ---- | <50 | ---- | <50 | <50 | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | ---- | <10 | ---- | <10 | <10 | <10 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | ---- | 116 | ---- | 105 | 114 | |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | ---- | 67.2 | ---- | 73.9 | 68.0 | |
| Toluene-D8 | 2037-26-5 | 0.1 | % | ---- | 61.0 | ---- | 78.7 | 78.0 | |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | ---- | 78.9 | ---- | 96.6 | 71.8 | |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | ---- | 108 | ---- | 109 | 106 | |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | ---- | 110 | ---- | 113 | 104 | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | ---- | 102 | ---- | 115 | 102 | |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT126C_BH49_0.5 | CPT126C_BH49_1.0 | CPT126C_BH49_1.5 | CPT131_BH51_0.0 | CPT131_BH51_0.5 |
|--|------------|-------|------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | 18-Jan-2019 10:50 | 18-Jan-2019 10:55 | 18-Jan-2019 11:00 | 18-Jan-2019 12:45 | 18-Jan-2019 12:50 |
| Compound | CAS Number | LOR | Unit | EM1900656-008 | EM1900656-009 | EM1900656-010 | EM1900656-012 | EM1900656-013 |
| | | | | Result | Result | Result | Result | Result |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | ---- | 114 | ---- | 116 | 106 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | ---- | 101 | ---- | 111 | 100 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | ---- | 120 | ---- | 122 | 112 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | ---- | 128 | ---- | 128 | 125 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | ---- | 106 | ---- | 108 | 98.2 |



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|--|------------|-------|-------------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT131_BH51_1.5 | QC154_180119 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 13:05 | 18-Jan-2019 09:45 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900656-015 | EM1900656-018 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | ---- | 6.3 | ---- | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | 4.7 | ---- | ---- | ---- | ---- |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | 22 | ---- | ---- | ---- | ---- |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | 0.03 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | <0.005 | ---- | ---- | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | <10 | ---- | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | 1.5 | ---- | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | 0.03 | ---- | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | 22 | ---- | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | 2 | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | 0.03 | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | 22 | ---- | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | 2 | ---- | ---- | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | ---- | 24.9 | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | | ---- | 13 | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | ---- | <2 | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | | ---- | 10 | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | | ---- | <2 | ---- | ---- | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | | ---- | <5 | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | ---- | <0.1 | ---- | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | ---- | 0.5 | ---- | ---- | ---- |



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|--|-------------------|------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT131_BH51_1.5 | QC154_180119 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 13:05 | 18-Jan-2019 09:45 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900656-015 | EM1900656-018 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | ---- | 290 | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | ---- | <0.1 | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | ---- | <0.2 | ---- | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | ---- | <0.2 | ---- | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | ---- | <1 | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | ---- | <0.4 | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | ---- | <0.04 | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | ---- | <0.01 | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | ---- | <0.02 | ---- | ---- | ---- |



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|--|-------------------|------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT131_BH51_1.5 | QC154_180119 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 13:05 | 18-Jan-2019 09:45 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900656-015 | EM1900656-018 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | ---- | <0.02 | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | ---- | <0.02 | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | ---- | <0.01 | ---- | ---- | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | ---- | ---- | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | ---- | <0.03 | ---- | ---- | ---- | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | ---- | <0.03 | ---- | ---- | ---- | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | ---- | <0.03 | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | ---- | <0.03 | ---- | ---- | ---- | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | ---- | <0.05 | ---- | ---- | ---- | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | ---- | <0.05 | ---- | ---- | ---- | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | ---- | <0.03 | ---- | ---- | ---- | ---- |
| 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | ---- | <0.05 | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | ---- | <0.2 | ---- | ---- | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | ---- | <0.03 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | ---- | <1 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | ---- | <1 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | ---- | <1 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | ---- | <1 | ---- | ---- | ---- | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | ---- | <1 | ---- | ---- | ---- | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | ---- | <5 | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | ---- | <5 | ---- | ---- | ---- | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | ---- | <5 | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | ---- | <5 | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | ---- | <5 | ---- | ---- | ---- | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | ---- | <1 | ---- | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | ---- | <0.5 | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | ---- | <0.5 | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | ---- | <0.5 | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | ---- | <0.5 | ---- | ---- | ---- | ---- |



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|---|-------------------|------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT131_BH51_1.5 | QC154_180119 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 13:05 | 18-Jan-2019 09:45 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900656-015 | EM1900656-018 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | ---- | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | ---- | 0.6 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | ---- | 1.2 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT131_BH51_1.5 | QC154_180119 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 13:05 | 18-Jan-2019 09:45 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900656-015 | EM1900656-018 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5 | 0.05 | mg/kg | | ---- | <0.05 | ---- | ---- | ---- |
| | 0-2 | | | | | | | | |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | ---- | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | ---- | <10 | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | ---- | <10 | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | ---- | <100 | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | ---- | <100 | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | ---- | <100 | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | ---- | <100 | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | ---- | <50 | ---- | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | ---- | <10 | ---- | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | ---- | 107 | ---- | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | ---- | 67.4 | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | ---- | 64.6 | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | ---- | 79.5 | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | ---- | 100 | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | ---- | 99.4 | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | ---- | 90.1 | ---- | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT131_BH51_1.5 | QC154_180119 | ---- | ---- | ---- |
| | | | | Client sampling date / time | 18-Jan-2019 13:05 | 18-Jan-2019 09:45 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900656-015 | EM1900656-018 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | ---- | 101 | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | ---- | 95.8 | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | ---- | 108 | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | ---- | 117 | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | ---- | 89.8 | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC354_180119 | QC454_180119 | QC559_180119 | QC560_180119 | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 11:30 | 18-Jan-2019 11:30 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900656-019 | EM1900656-020 | EM1900656-021 | EM1900656-022 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 6.82 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | <0.005 | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | <0.004 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC354_180119 | QC454_180119 | QC559_180119 | QC560_180119 | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 11:30 | 18-Jan-2019 11:30 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900656-019 | EM1900656-020 | EM1900656-021 | EM1900656-022 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |



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|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC354_180119 | QC454_180119 | QC559_180119 | QC560_180119 | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 11:30 | 18-Jan-2019 11:30 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900656-019 | EM1900656-020 | EM1900656-021 | EM1900656-022 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | <20 | <20 | <20 | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |



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|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC354_180119 | QC454_180119 | QC559_180119 | QC560_180119 | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 11:30 | 18-Jan-2019 11:30 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900656-019 | EM1900656-020 | EM1900656-021 | EM1900656-022 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 66.2 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 88.0 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 80.4 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 98.5 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 21.6 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 53.8 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 42.8 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 69.3 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 70.0 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 71.0 | ---- | ---- | ---- | ---- |



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|---|------------|------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC354_180119 | QC454_180119 | QC559_180119 | QC560_180119 | ---- |
| Client sampling date / time | | | | | 18-Jan-2019 11:30 | 18-Jan-2019 11:30 | 18-Jan-2019 00:00 | 18-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900656-019 | EM1900656-020 | EM1900656-021 | EM1900656-022 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.25 | % | | 31.2 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.25 | % | | 73.8 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.25 | % | | 80.9 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.25 | % | | 80.5 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.25 | % | | 82.6 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.25 | % | | 94.2 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.25 | % | | 94.9 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.25 | % | | 88.8 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 91.8 | 88.1 | 93.2 | 90.9 | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 84.9 | 72.6 | 87.6 | 80.4 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 90.4 | 86.8 | 93.7 | 101 | ---- |



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|---|-------------------|----------------|------|
| Sub-Matrix: SOIL | | □□□□ □ □□□ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

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|---|-------------------|----------------|------|
| Sub-Matrix: WATER | | □□□□ □ □□□ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 13 | 90 |
| 2-Chlorophenol-D4 | 93951-73-6 | 42 | 117 |
| 2,4,6-Tribromophenol | 118-79-6 | 52 | 140 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 49 | 136 |

| Sub-Matrix: WATER | | ☐☐☐☐ ☐ ☐☐☐ ☐☐ s ☐ | |
|--|------------|-------------------|-----|
| Compound | CAS Number | ☐☐% | ☐☐☐ |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 49 | 128 |
| 2-Fluorobiphenyl | 321-60-8 | 57 | 137 |
| Anthracene-d10 | 1719-06-8 | 67 | 137 |
| 4-Terphenyl-d14 | 1718-51-0 | 66 | 136 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900656 | Page | : 1 of 14 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 18-Jan-2019 16:00 |
| Order number | : ---- | Date Analysed | : 21-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 24-Jan-2019 19:46 |
| No. of samples received | : 23 | | |
| No. of samples analysed | : 16 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT126A_BH4 | | CPT126A_BH4 | | CPT126C_BH4 | | CPT126C_BH4 | | CPT131_BH51 | |
|--|--------------|------|---------|--------------------|-------------|---------------|---------------|---------------|---------------|---------------|--|-------------|--|-------------|--|
| | | | | Sampling date/time | | 18-Jan-2019 | | 18-Jan-2019 | | 18-Jan-2019 | | 18-Jan-2019 | | 18-Jan-2019 | |
| | | | | | | 09:15 | | 09:45 | | 10:45 | | 10:55 | | 12:45 | |
| Compound | Method | LOR | Unit | 000000 0000 | 000000 0000 | EM1900656-001 | EM1900656-004 | EM1900656-007 | EM1900656-009 | EM1900656-012 | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.4 | 6.5 | 5.5 | 5.7 | 4.9 | | | | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | <5 | <5 | <5 | <5 | | | | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | <1 | | | | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 | 5 | 8 | 13 | 9 | | | | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 5 | 12 | 19 | 10 | 12 | | | | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | 6 | <2 | | | | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 2 | 11 | 10 | 13 | 4 | | | | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | <5 | | | | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | <2 | | | | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 | <5 | 18 | <5 | 22 | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | | | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | 1 | <1 | 2 | <1 | 2 | | | | | |
| EK040T: Fluoride Total | | | | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 80 | 320 | 110 | 240 | 90 | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | <1 | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT126A_BH4
8_0.0 | CPT126A_BH4
8_1.5 | CPT126C_BH4
9_0.0 | CPT126C_BH4
9_1.0 | CPT131_BH51
_0.0 |
|--|--------------|------|-------|------------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 18-Jan-2019
09:15 | 18-Jan-2019
09:45 | 18-Jan-2019
10:45 | 18-Jan-2019
10:55 | 18-Jan-2019
12:45 |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1900656-001 | EM1900656-004 | EM1900656-007 | EM1900656-009 | EM1900656-012 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | <50 | <50 | <50 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT126A_BH4
8_0.0 | CPT126A_BH4
8_1.5 | CPT126C_BH4
9_0.0 | CPT126C_BH4
9_1.0 | CPT131_BH51
_0.0 |
|--|--------------|------|---------|--------------------|-------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□ | □□□□ | 18-Jan-2019
09:15 | 18-Jan-2019
09:45 | 18-Jan-2019
10:45 | 18-Jan-2019
10:55 | 18-Jan-2019
12:45 |
| | | | | □□ □ | □□□□ | EM1900656-001 | EM1900656-004 | EM1900656-007 | EM1900656-009 | EM1900656-012 |
| | | | | □□ □ | □□ □ | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.4 | 6.5 | 5.5 | 5.7 | 4.9 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | <5 | 5 | 8 | 13 | 9 |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 5 | 12 | 19 | 10 | 12 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | 6 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 2 | 11 | 10 | 13 | 4 |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | <5 | <5 | 18 | <5 | 22 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | 1 | <1 | 2 | <1 | 2 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 80 | 320 | 110 | 240 | 90 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT126A_BH4
8_0.0 | CPT126A_BH4
8_1.5 | CPT126C_BH4
9_0.0 | CPT126C_BH4
9_1.0 | CPT131_BH51
_0.0 |
|--|--------------|------|-------|--------------------|---------------|---------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 18-Jan-2019
09:15 | 18-Jan-2019
09:45 | 18-Jan-2019
10:45 | 18-Jan-2019
10:55 | 18-Jan-2019
12:45 |
| Compound | Method | LOR | Unit | | □□□□
□□□ □ | □□□□
□□□ □ | EM1900656-001 | EM1900656-004 | EM1900656-007 | EM1900656-009 | EM1900656-012 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 100 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 650 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 10000 | <50 | <50 | <50 | <50 | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT126A_BH4
8_0.0 | CPT126A_BH4
8_1.5 | CPT126C_BH4
9_0.0 | CPT126C_BH4
9_1.0 | CPT131_BH51
_0.0 | | | |
|--|--|--|--|--------------------|------|----------------------|----------------------|----------------------|----------------------|---------------------|---------|---------|-------|
| | | | | Sampling date/time | | | | | | | 0000 00 | 0000 00 | |
| | | | | | | | | | | | 00 00 | 0000 | |
| Compound | | | | Method | LOR | Unit | 00 00 | 0000 | 0000 0000 | 0000 0000 | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | |
| pH (CaCl2) | | | | EA001 | 0.1 | pH Unit | 4 | 9 | 5.4 | 6.5 | 5.5 | 5.7 | 4.9 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | | |
| Arsenic | | | | EG005T | 5 | mg/kg | ---- | 20 | <5 | <5 | <5 | <5 | <5 |
| Cadmium | | | | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | <1 |
| Copper | | | | EG005T | 5 | mg/kg | ---- | 100 | <5 | 5 | 8 | 13 | 9 |
| Lead | | | | EG005T | 5 | mg/kg | ---- | 300 | 5 | 12 | 19 | 10 | 12 |
| Molybdenum | | | | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | 6 | <2 |
| Nickel | | | | EG005T | 2 | mg/kg | ---- | 60 | 2 | 11 | 10 | 13 | 4 |
| Selenium | | | | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | <5 |
| Silver | | | | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | <2 |
| Tin | | | | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Zinc | | | | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | 18 | <5 | 22 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | |
| Mercury | | | | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | |
| Hexavalent Chromium | | | | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | |
| Total Cyanide | | | | EK026SF | 1 | mg/kg | ---- | 50 | 1 | <1 | 2 | <1 | 2 |
| EK040T: Fluoride Total | | | | | | | | | | | | | |
| Fluoride | | | | EK040T | 40 | mg/kg | ---- | 450 | 80 | 320 | 110 | 240 | 90 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | | | | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | |
| Benzene | | | | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | | | | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | | | | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | | | | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | | | | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT126A_BH4
8_0.0 | CPT126A_BH4
8_1.5 | CPT126C_BH4
9_0.0 | CPT126C_BH4
9_1.0 | CPT131_BH51
_0.0 |
|--|--------------|------|-------|--------------------|---------------|---------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 18-Jan-2019
09:15 | 18-Jan-2019
09:45 | 18-Jan-2019
10:45 | 18-Jan-2019
10:55 | 18-Jan-2019
12:45 |
| Compound | Method | LOR | Unit | | □□□□
□□□ □ | □□□□
□□□ □ | EM1900656-001 | EM1900656-004 | EM1900656-007 | EM1900656-009 | EM1900656-012 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 100 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 1000 | <50 | <50 | <50 | <50 | <50 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT131_BH51_0.5 | QC154_180119 | ---- | ---- | ---- | | |
|--|--------------|------|---------|--------------------|--------|-----------------|---------------|-------|-------|-------|----------|----------|
| | | | | Sampling date/time | | | | | | | □□□□□ □□ | □□□□□ □□ |
| | | | | □□□ □□ | □□□□□ | | | | | | □□□ □ | □□□ □ |
| Compound | Method | LOR | Unit | □□□ □□ | □□□ □ | EM1900656-013 | EM1900656-018 | ----- | ----- | ----- | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 4.4 | 6.3 | ---- | ---- | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | <5 | ---- | ---- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | ---- | ---- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 5 | <5 | ---- | ---- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 12 | 13 | ---- | ---- | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | ---- | ---- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 6 | 10 | ---- | ---- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | ---- | ---- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | ---- | ---- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 | <5 | ---- | ---- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | ---- | ---- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | 0.5 | ---- | ---- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | <1 | ---- | ---- | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 130 | 290 | ---- | ---- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | ---- | ---- | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | ---- | ---- | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | ---- | ---- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | ---- | ---- | ---- | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT131_BH51_0.5 | QC154_180119 | ---- | ---- | ---- |
|--|--------------|------|-------|--------------------|---------|-------------------|-------------------|-------|-------|-------|
| | | | | Sampling date/time | | 18-Jan-2019 12:50 | 18-Jan-2019 09:45 | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | □□□□ □□ | □□□□ □□ | EM1900656-013 | EM1900656-018 | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | ---- | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | <50 | ---- | ---- | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| | | | | | | | | | | | | |
|--|--------------|------|---------|--------------------|-------|---------|---------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT131_BH51_0.5 | QC154_180119 | ---- | ---- | ---- |
| | | | | Sampling date/time | | | | 18-Jan-2019 12:50 | 18-Jan-2019 09:45 | ---- | ---- | ---- |
| | | | | | | | | EM1900656-013 | EM1900656-018 | ----- | ----- | ----- |
| Compound | Method | LOR | Unit | □□ □□ | □□□□ | □□ □□ | □□□□ | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.4 | 6.3 | ---- | ---- | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | ---- | ---- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | ---- | ---- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 5 | <5 | ---- | ---- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 12 | 13 | ---- | ---- | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | ---- | ---- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 6 | 10 | ---- | ---- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | ---- | ---- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | ---- | ---- | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | ---- | ---- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | <5 | <5 | ---- | ---- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | ---- | ---- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | 0.5 | ---- | ---- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | <1 | ---- | ---- | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 130 | 290 | ---- | ---- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | ---- | ---- | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | ---- | ---- | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | ---- | ---- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | CPT131_BH51_0.5 | QC154_180119 | ---- | ---- | ---- |
|--|--------------|------|-------|--------------------|-------------|-------------------|-------------------|-------|-------|-------|
| | | | | Sampling date/time | | 18-Jan-2019 12:50 | 18-Jan-2019 09:45 | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | □ □ □ □ □ □ | □ □ □ □ □ □ | EM1900656-013 | EM1900656-018 | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 | <0.5 | ---- | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 | <0.5 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | ---- | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 | <0.03 | ---- | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | <10 | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | <50 | <50 | ---- | ---- | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT131_BH51 | QC154_18011 | ---- | ---- | ---- |
|--|--------------|------|---------|--------------------|----------------------|---------|---------|----------------------|---------------|------|------|------|
| | | | | Sampling date/time | 18-Jan-2019
12:50 | | | 18-Jan-2019
09:45 | | | | |
| | | | | | | | | | EM1900656-013 | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.4 | 6.3 | ---- | ---- | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | <5 | ---- | ---- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | ---- | ---- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 5 | <5 | ---- | ---- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 12 | 13 | ---- | ---- | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | ---- | ---- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 6 | 10 | ---- | ---- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | ---- | ---- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | ---- | ---- | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | ---- | ---- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | ---- | ---- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | ---- | ---- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | 0.5 | ---- | ---- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | <1 | ---- | ---- | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 130 | 290 | ---- | ---- | ---- | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | ---- | ---- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | ---- | ---- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | ---- | ---- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | | |
|---|--------------|------|-------|------------------|------|-------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL | | | | Client sample ID | | | CPT131_BH51_0.5 | QC154_180119 | ---- | ---- | ---- |
| Sampling date/time | | | | | | | 18-Jan-2019 12:50 | 18-Jan-2019 09:45 | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | | | | EM1900656-013 | EM1900656-018 | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | ---- | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | <50 | ---- | ---- | ---- | ---- |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900656 | Page | : 1 of 20 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 18-Jan-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 21-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 24-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : Gas Import Jetty Pipeline Project (GIJPP) EES | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 23 | | |
| No. of samples analysed | : 16 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□□□□ □□ □□

[REDACTED]
[REDACTED]
[REDACTED]

□□□□□□

Senior Acid Sulfate Soil Chemist
Senior Inorganic Chemist
Senior Organic Chemist

□□□□□□ □□□□

Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2147769) | | | | | | | | | |
| EM1900606-151 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 9.0 | 9.0 | 0.00 | 0% - 20% |
| EM1900656-004 | CPT126A_BH48_1.5 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 6.5 | 6.7 | 3.03 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2151279) | | | | | | | | | |
| EM1900656-003 | CPT126A_BH48_1.0 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 6.2 | 6.3 | 1.60 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2151279) | | | | | | | | | |
| EM1900656-003 | CPT126A_BH48_1.0 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.005 | <0.005 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2147862) | | | | | | | | | |
| EM1900641-001 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 25.9 | 26.8 | 3.32 | 0% - 20% |
| EM1900656-018 | QC154_180119 | EA055: Moisture Content | ---- | 0.1 | % | 24.9 | 25.1 | 0.521 | 0% - 20% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2148804) | | | | | | | | | |
| EM1900641-001 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 14 | 15 | 9.45 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 29 | 30 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 15 | 16 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 6 | 8 | 21.1 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005T: Total Metals by ICP-AES (QC Lot: 2148804) - continued | | | | | | | | | |
| EM1900656-013 | CPT131_BH51_0.5 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 6 | 6 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 12 | 8 | 36.4 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2148803) | | | | | | | | | |
| EM1900641-001 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900656-013 | CPT131_BH51_0.5 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2147781) | | | | | | | | | |
| EM1900641-002 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900656-018 | QC154_180119 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | 0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2148152) | | | | | | | | | |
| EM1900641-002 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900656-018 | QC154_180119 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2147783) | | | | | | | | | |
| EM1900641-001 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 220 | 200 | 7.06 | No Limit |
| EM1900656-013 | CPT131_BH51_0.5 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 130 | 130 | 0.00 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2147728) | | | | | | | | | |
| EM1900641-001 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900656-018 | QC154_180119 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2147720) | | | | | | | | | |
| EM1900656-001 | CPT126A_BH48_0.0 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2147720) | | | | | | | | | |
| EM1900656-001 | CPT126A_BH48_0.0 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2147720) | | | | | | | | | |
| EM1900656-001 | CPT126A_BH48_0.0 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2147720) - continued | | | | | | | | | |
| EM1900656-001 | CPT126A_BH48_0.0 | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit | | |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2147725) | | | | | | | | | |
| EM1900641-001 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1900656-018 | QC154_180119 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2147725) | | | | | | | | | |
| EM1900641-001 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2147725) - continued | | | | | | | | | |
| EM1900641-001 | Anonymous | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900656-018 | QC154_180119 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2147725) | | | | | | | | | |
| EM1900641-001 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900656-018 | QC154_180119 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2147725) - continued | | | | | | | | | |
| EM1900656-018 | QC154_180119 | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| EP075I: Organochlorine Pesticides (QC Lot: 2147725) | | | | | | | | | |
| EM1900641-001 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900656-018 | QC154_180119 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2147725) - continued | | | | | | | | | |
| EM1900656-018 | QC154_180119 | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit | | |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2147720) | | | | | | | | | |
| EM1900656-001 | CPT126A_BH48_0.0 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2147727) | | | | | | | | | |
| EM1900641-001 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | 100 | 120 | 12.9 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900656-018 | QC154_180119 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2147720) | | | | | | | | | |
| EM1900656-001 | CPT126A_BH48_0.0 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2147727) | | | | | | | | | |
| EM1900641-001 | Anonymous | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | 100 | 130 | 21.6 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900656-018 | QC154_180119 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2150180) | | | | | | | | | |
| EM1900649-012 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.25 | 7.90 | 8.58 | 0% - 20% |
| EM1900636-014 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 8.35 | 8.35 | 0.00 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2147688) | | | | | | | | | |
| EM1900641-029 | Anonymous | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2147692) | | | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2147692) - continued | | | | | | | | | |
| EM1900655-004 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900749-004 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.002 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.065 | 0.067 | 1.86 | 0% - 50% |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2147689) | | | | | | | | | |
| EM1900649-016 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900641-029 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2146936) | | | | | | | | | |
| EM1900641-029 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900681-020 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2148063) | | | | | | | | | |
| EM1900533-006 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | 0.006 | 0.006 | 0.00 | No Limit |
| EM1900533-069 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2150179) | | | | | | | | | |
| EM1900636-014 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.4 | 0.4 | 0.00 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2150300) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2147835) | | | | | | | | | |
| EM1900641-029 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2147835) | | | | | | | | | |
| EM1900641-029 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2147835) - continued | | | | | | | | | |
| EM1900641-029 | Anonymous | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2147835) | | | | | | | | | |
| EM1900641-029 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2147835) | | | | | | | | | |
| EM1900641-029 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2150299) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | | 205-82-3 | | | | | | |
| | | EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Indeno(1,2,3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2147836) | | | | | | | | | |
| EM1900641-029 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2150298) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |

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 Work Order : EM1900656
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|--------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|----------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2150298) - continued | | | | | | | | | |
| EM1900594-029 | Anonymous | EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2147836) | | | | | | | | | |
| EM1900641-029 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2150298) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2147836) | | | | | | | | | |
| EM1900641-029 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|-------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA033-A: Actual Acidity (QCLot: 2151279) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 100 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 81.4 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2151279) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 94.9 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES (QCLot: 2148804) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 91.3 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 89.4 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 89.8 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 90.0 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 101 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 97.6 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 96.9 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 82.4 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 92.2 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 93.2 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2148803) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 89.1 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2147781) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 78.4 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148152) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 98.9 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2147783) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 92.5 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2147728) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 115 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2147720) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 81.5 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 87.2 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 89.9 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 87.8 | 66 | 115 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2147720) - continued | | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 93.0 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 87.9 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2147720) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 87.1 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2147720) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 73.8 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 84.0 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 84.6 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.2 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 93.2 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 93.0 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 91.9 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 85.1 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 86.8 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 86.6 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 90.0 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 84.8 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 89.9 | 71 | 118 |
| EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 92.1 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 117 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 84.2 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 97.5 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 100 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 118 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2147725) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 118 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 117 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2.6 mg/kg | 96.5 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 128 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 119 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 121 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 65 | 124 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 5.2 mg/kg | 103 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 101 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2147725) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2.6 mg/kg | 98.1 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 125 | 65 | 126 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2147725) - continued | | | | | | | | |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 5.2 mg/kg | 95.7 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 104 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 113 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 139 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 114 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 118 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 107 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 98.2 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147725) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2.6 mg/kg | 95.6 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2.6 mg/kg | 105 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 117 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2.6 mg/kg | 99.5 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 117 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 61.2 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 113 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 112 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 127 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 5.2 mg/kg | 110 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 122 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2.6 mg/kg | 114 | 72 | 134 |
| EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2.6 mg/kg | 118 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2.6 mg/kg | 117 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2147725) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 122 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 103 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 128 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 126 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 128 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 117 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 114 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 99.0 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 105 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 106 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2.6 mg/kg | 111 | 64 | 137 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 106 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 119 | 72 | 132 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2147689) - continued | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 93.9 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2146936) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 109 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148063) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 99.8 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2150179) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 99.0 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2150300) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 80.6 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2147835) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 86.8 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2147835) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 66.5 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 72.7 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 89.2 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 75.2 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 80.4 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 73.3 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 68.7 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 88.0 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 76.9 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 91.2 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 75.7 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 83.0 | 76 | 112 |
| EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 95.6 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 77.4 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2147835) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 83.7 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 83.4 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 85.7 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 80.6 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2147835) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 81.0 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2150299) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 92.7 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 111 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 97.6 | 53 | 117 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2150299) - continued | | | | | | | | |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 105 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 100 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 99.3 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 106 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 102 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 104 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 97.5 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | 5 µg/L | 97.0 | 56 | 131 |
| | 205-82-3 | | | | | | | |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 99.8 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 98.2 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 97.6 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 99.1 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 100 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2146988) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 93.8 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 107 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 120 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 109 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 124 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 124 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 20 µg/L | 116 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5 | 2 | µg/L | <2 | 30 µg/L | 117 | 53 | 125 |
| | 8-90-2 | | | | | | | |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 121 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2146988) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 4 | µg/L | <4 | 10 µg/L | 44.7 | 18 | 51 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | 10 µg/L | 90.2 | 49 | 106 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | 20 µg/L | 83.0 | 41 | 91 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | 10 µg/L | 112 | 48 | 120 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | 10 µg/L | 104 | 47 | 128 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | 60 µg/L | 102 | 41 | 130 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | 60 µg/L | 42.7 | 19 | 49 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | 60 µg/L | 93.2 | 47 | 126 |
| EP075-EM: Dinoseb | 88-85-7 | 50 | µg/L | <50 | 60 µg/L | 118 | 49 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | 50 µg/L | 125 | 61 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2146988) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 10 µg/L | 115 | 57 | 126 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB) Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------|------|--------|--------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2146988) - continued | | | | | | | | |
| EP075-EM: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 123 | 62 | 134 |
| EP075-EM: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 108 | 58 | 133 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 116 | 60 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 114 | 59 | 132 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 124 | 61 | 137 |
| EP075-EM: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 10 µg/L | 114 | 59 | 130 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 135 | 59 | 135 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | 10 µg/L | # 140 | 59 | 128 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147836) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 90.2 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2150298) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 54.9 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 63.5 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 63.0 | 55 | 130 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2147836) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 90.3 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2150298) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 57.6 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 64.1 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 63.8 | 53 | 136 |
| EP080: BTEXN (QCLot: 2147836) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 93.0 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 92.3 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 91.3 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 92.2 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 95.9 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 103 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| Laboratory sample ID | | | | Matrix Spike (MS) Report | | | |
|---|------------------|-----------------|-----------|--------------------------|-------------------|---------------------|------|
| | | | | Spike Concentration | Spike Recovery(%) | Recovery Limits (%) | |
| | | | | | MS | Low | High |
| Client sample ID | Method: Compound | CAS Number | | | | | |
| EG005T: Total Metals by ICP-AES (QCLot: 2148804) | | | | | | | |
| EM1900641-002 | Anonymous | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 84.2 | 78 | 124 |

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2148804) - continued | | | | | | | |
| EM1900641-002 | Anonymous | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 91.9 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 97.2 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 93.9 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 85.1 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 93.5 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 80.4 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 92.1 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2148803) | | | | | | | |
| EM1900641-002 | Anonymous | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 86.1 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2147781) | | | | | | | |
| EM1900641-025 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | # 41.0 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148152) | | | | | | | |
| EM1900641-025 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 106 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2147783) | | | | | | | |
| EM1900641-002 | Anonymous | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 102 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2147728) | | | | | | | |
| EM1900641-026 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 123 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2147720) | | | | | | | |
| EM1900656-004 | CPT126A_BH48_1.5 | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 73.6 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 80.3 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2147720) | | | | | | | |
| EM1900656-004 | CPT126A_BH48_1.5 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 76.5 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 81.5 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 78.2 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2147725) | | | | | | | |
| EM1900641-002 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 117 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 126 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 51.4 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2147725) | | | | | | | |
| EM1900641-002 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 130 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 79.1 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147725) | | | | | | | |
| EM1900641-002 | Anonymous | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 103 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 100 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147720) | | | | | | | |

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|-------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147720) - continued | | | | | | | |
| EM1900656-004 | CPT126A_BH48_1.5 | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 72.3 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147727) | | | | | | | |
| EM1900641-025 | Anonymous | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 98.4 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 106 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 103 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2147720) | | | | | | | |
| EM1900656-004 | CPT126A_BH48_1.5 | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 72.1 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2147727) | | | | | | | |
| EM1900641-025 | Anonymous | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 105 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 106 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 93.3 | 44 | 126 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|---|------------------|-----------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2147692) | | | | | | | |
| EM1900655-004 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 97.4 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 94.0 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 94.5 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 91.2 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 97.8 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 97.9 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2147689) | | | | | | | |
| EM1900649-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 87.2 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2146936) | | | | | | | |
| EM1900656-019 | QC354_180119 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 109 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2148063) | | | | | | | |
| EM1900533-024 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 93.6 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2150179) | | | | | | | |
| EM1900641-029 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 96.4 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2147835) | | | | | | | |
| EM1900656-019 | QC354_180119 | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 79.9 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 76.0 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2147835) | | | | | | | |
| EM1900656-019 | QC354_180119 | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 82.6 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147836) | | | | | | | |

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 Work Order : EM1900656
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147836) - continued | | | | | | | |
| EM1900656-019 | QC354_180119 | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 68.0 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2147836) | | | | | | | |
| EM1900656-019 | QC354_180119 | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 67.9 | 44 | 122 |
| EP080: BTEXN (QCLot: 2147836) | | | | | | | |
| EM1900656-019 | QC354_180119 | EP080: Benzene | 71-43-2 | 20 µg/L | 86.6 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 87.3 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|---|-------------------------|------------------------------------|
| Work Order | : EM1900656 | Page | : 1 of 15 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 18-Jan-2019 |
| Site | : Gas Import Jetty Pipeline Project (GIJPP) EES | Issue Date | : 24-Jan-2019 |
| Sampler | : [REDACTED] | No. of samples received | : 23 |
| Order number | : | No. of samples analysed | : 16 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|---------------------|------------|--------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2147725-001 | ---- | Endrin | 72-20-8 | 37.0 % | 55-148% | Recovery less than lower control limit |
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | EM1900641--025 | Anonymous | Hexavalent Chromium | 18540-29-9 | 41.0 % | 58-114% | Recovery less than lower data quality objective |

Matrix: **WATER**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|----------|------------|-------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2146988-001 | ---- | 4,4'-DDT | 50-29-3 | 140 % | 59-128% | Recovery greater than upper control limit |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
QC354_180119 | ---- | ---- | ---- | 23-Jan-2019 | 18-Jan-2019 | 5 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| Semivolatile Organic Compounds - Waste Classification | 0 | 6 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 8 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 7 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 6 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 7 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001)
CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5, | 18-Jan-2019 | 23-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 23-Jan-2019 | ✓ |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT126A_BH48_1.0,
CPT126C_BH49_0.5,
CPT131_BH51_0.5, | CPT126A_BH48_2.0,
CPT126C_BH49_1.5,
CPT131_BH51_1.5 | 18-Jan-2019 | 24-Jan-2019 | 18-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT126A_BH48_1.0,
CPT126C_BH49_0.5,
CPT131_BH51_0.5, | CPT126A_BH48_2.0,
CPT126C_BH49_1.5,
CPT131_BH51_1.5 | 18-Jan-2019 | 24-Jan-2019 | 18-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT126A_BH48_1.0,
CPT126C_BH49_0.5,
CPT131_BH51_0.5, | CPT126A_BH48_2.0,
CPT126C_BH49_1.5,
CPT131_BH51_1.5 | 18-Jan-2019 | 24-Jan-2019 | 18-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT126A_BH48_1.0,
CPT126C_BH49_0.5,
CPT131_BH51_0.5, | CPT126A_BH48_2.0,
CPT126C_BH49_1.5,
CPT131_BH51_1.5 | 18-Jan-2019 | 24-Jan-2019 | 18-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT126A_BH48_1.0,
CPT126C_BH49_0.5,
CPT131_BH51_0.5, | CPT126A_BH48_2.0,
CPT126C_BH49_1.5,
CPT131_BH51_1.5 | 18-Jan-2019 | 24-Jan-2019 | 18-Jan-2020 | ✓ | 24-Jan-2019 | 24-Apr-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5, | 18-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 01-Feb-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T) | | | | | | | | |
| CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5, | 18-Jan-2019 | 23-Jan-2019 | 17-Jul-2019 | ✓ | 23-Jan-2019 | 17-Jul-2019 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T) | | | | | | | | |
| CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5, | 18-Jan-2019 | 23-Jan-2019 | 15-Feb-2019 | ✓ | 24-Jan-2019 | 15-Feb-2019 | ✓ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G) | | | | | | | | |
| CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5, | 18-Jan-2019 | 22-Jan-2019 | 15-Feb-2019 | ✓ | 23-Jan-2019 | 29-Jan-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF) | | | | | | | | |
| CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5, | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 05-Feb-2019 | ✓ |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T) | | | | | | | | |
| CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5, | 18-Jan-2019 | 22-Jan-2019 | 15-Feb-2019 | ✓ | 23-Jan-2019 | 15-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM) | | | | | | | | |
| CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5, | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | | | | | | | |
| CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5, | 18-Jan-2019 | 22-Jan-2019 | 25-Jan-2019 | ✓ | 22-Jan-2019 | 25-Jan-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 18-Jan-2019 | 22-Jan-2019 | 25-Jan-2019 | ✓ | 22-Jan-2019 | 25-Jan-2019 | ✓ |
| CPT126A_BH48_0.0, | CPT126A_BH48_1.5, | | | | | | | |
| CPT126C_BH49_0.0, | CPT126C_BH49_1.0, | | | | | | | |
| CPT131_BH51_0.0, | CPT131_BH51_0.5, | | | | | | | |
| QC154_180119 | | | | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 18-Jan-2019 | 22-Jan-2019 | 25-Jan-2019 | ✓ | 22-Jan-2019 | 25-Jan-2019 | ✓ |
| CPT126A_BH48_0.0, | CPT126A_BH48_1.5, | | | | | | | |
| CPT126C_BH49_0.0, | CPT126C_BH49_1.0, | | | | | | | |
| CPT131_BH51_0.0, | CPT131_BH51_0.5, | | | | | | | |
| QC154_180119 | | | | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| CPT126A_BH48_0.0, | CPT126A_BH48_1.5, | | | | | | | |
| CPT126C_BH49_0.0, | CPT126C_BH49_1.0, | | | | | | | |
| CPT131_BH51_0.0, | CPT131_BH51_0.5, | | | | | | | |
| QC154_180119 | | | | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| CPT126A_BH48_0.0, | CPT126A_BH48_1.5, | | | | | | | |
| CPT126C_BH49_0.0, | CPT126C_BH49_1.0, | | | | | | | |
| CPT131_BH51_0.0, | CPT131_BH51_0.5, | | | | | | | |
| QC154_180119 | | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| CPT126A_BH48_0.0, | CPT126A_BH48_1.5, | | | | | | | |
| CPT126C_BH49_0.0, | CPT126C_BH49_1.0, | | | | | | | |
| CPT131_BH51_0.0, | CPT131_BH51_0.5, | | | | | | | |
| QC154_180119 | | | | | | | | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| CPT126A_BH48_0.0, | CPT126A_BH48_1.5, | | | | | | | |
| CPT126C_BH49_0.0, | CPT126C_BH49_1.0, | | | | | | | |
| CPT131_BH51_0.0, | CPT131_BH51_0.5, | | | | | | | |
| QC154_180119 | | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|--|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5,
QC154_180119 | 18-Jan-2019 | 22-Jan-2019 | 25-Jan-2019 | ✔ | 22-Jan-2019 | 25-Jan-2019 | ✔ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5,
QC154_180119 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5,
QC154_180119 | 18-Jan-2019 | 22-Jan-2019 | 25-Jan-2019 | ✔ | 22-Jan-2019 | 25-Jan-2019 | ✔ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT126A_BH48_0.0,
CPT126C_BH49_0.0,
CPT131_BH51_0.0,
QC154_180119 | CPT126A_BH48_1.5,
CPT126C_BH49_1.0,
CPT131_BH51_0.5,
QC154_180119 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
QC354_180119 | 18-Jan-2019 | ---- | ---- | ---- | 23-Jan-2019 | 18-Jan-2019 | ✖ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Unspecified (EG020B-F)
QC354_180119 | 18-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 17-Jul-2019 | ✔ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Unspecified (EG035F)
QC354_180119 | 18-Jan-2019 | ---- | ---- | ---- | 24-Jan-2019 | 01-Feb-2019 | ✔ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Clear Plastic Bottle - NaOH Filtered (EG050F)
QC354_180119 | 18-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 15-Feb-2019 | ✔ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| White Plastic Bottle-NaOH (EK026SF)
QC354_180119 | 18-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 01-Feb-2019 | ✔ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
QC354_180119 | 18-Jan-2019 | ---- | ---- | ---- | 23-Jan-2019 | 15-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
QC354_180119 | 18-Jan-2019 | 23-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC354_180119 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 22-Jan-2019 | 01-Feb-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC354_180119 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 22-Jan-2019 | 01-Feb-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC354_180119 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 22-Jan-2019 | 01-Feb-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC354_180119 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 22-Jan-2019 | 01-Feb-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
QC354_180119 | 18-Jan-2019 | 23-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC354_180119 | 18-Jan-2019 | 22-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC354_180119 | 18-Jan-2019 | 22-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC354_180119 | 18-Jan-2019 | 22-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC354_180119 | 18-Jan-2019 | 23-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC354_180119, QC454_180119,
QC559_180119, QC560_180119 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 22-Jan-2019 | 01-Feb-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC354_180119 | 18-Jan-2019 | 23-Jan-2019 | 25-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC354_180119, QC454_180119,
QC559_180119, QC560_180119 | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✓ | 22-Jan-2019 | 01-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP080: BTEXN | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080) | | | | | | | | |
| QC354_180119, | QC454_180119, | 18-Jan-2019 | 22-Jan-2019 | 01-Feb-2019 | ✔ | 22-Jan-2019 | 01-Feb-2019 | ✔ |
| QC559_180119, | QC560_180119 | | | | | | | |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | Quality Control Specification | |
|---|----------|-------|---------|----------|----------|-------------------------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | | Evaluation |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 6 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 11 | 18.18 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 11 | 18.18 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 11 | 18.18 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 14 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 11 | 18.18 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 7 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Laboratory Control Samples (LCS)Method Blanks (MB)



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 8 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 7 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 6 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 7 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|--|
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazine. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |

| Preparation Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|---|
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |



| <i>Preparation Methods</i> | <i>Method</i> | <i>Matrix</i> | <i>Method Descriptions</i> |
|---|---------------|---------------|--|
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

ANZ
FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|-----------------|--|------|--|-------------|------------------------|--|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: POPPY | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GIJPP) EES | | MOBILE: | | PHONE: | |
| PROJECT NUMBER & TASK CODE: 4058284-60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | P.O. NO.: | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | |
| COOLER/HEAT (check appropriate) | | | | | | | |
| Flask: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | | | CONTAINER INFORMATION | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | CPT094-BH35-0.0 | S | 9:15 | 17/11/19 | 1x A-5.5 | 2 | |
| 2 | CPT094-BH35-0.5 | S | 9:20 | | | | |
| 3 | CPT094-BH35-1.0 | S | 9:25 | | | | |
| 4 | CPT094-BH35-1.5 | S | 9:30 | | | | |
| 5 | CPT094-BH35-2.0 | S | 9:45 | | | | |
| 6 | CPT094-BH35-2.5 | S | 9:50 | | | | |
| 7 | CPT117-BH44-0.0 | S | | | | | |
| 8 | CPT117-BH44-0.5 | S | | | | | |
| 9 | CPT117-BH44-1.0 | S | | | | | |
| 10 | CPT117-BH44-1.5 | S | | | | | |
| 11 | CPT117-BH44-2.0 | S | | | | | |
| 12 | CPT117-BH44-2.5 | S | | | | | |
| 13 | CPT090-BH36-0.0 | S | | | | | |
| 14 | CPT090-BH36-0.5 | S | | | | | |
| 15 | CPT090-BH36-1.0 | S | | | | | |
| 16 | CPT090-BH36-1.5 | S | | | | | |
| 17 | CPT090-BH36-2.0 | S | | | | | |
| 18 | CPT090-BH36-2.5 | S | | | | | |
| RECEIVED BY: | | | | RECEIVED BY: | | | |
| Name: POPPY | | Date: 17/11/19 | | Name: Alice | | Date: 17/11/19 | |
| Of: AECOM | | Time: 3:45 PM | | Of: ALS | | Time: 17:20 | |
| Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag. | | | | Soll Container Codes: Jar = Unpreserved Jar | | | |

| | | |
|--------------|---------------|-------------------|
| Forwarded to | Secondary Lab | Analysis Date 19/ |
|--------------|---------------|-------------------|

Environmental Division
Melbourne
Work Order Reference
EM1900681



Telephone : + 61-3-8549 9600

COC Page of

ANZ
FQM - Generic Chain of Custody Form

| | | | | | | |
|---|--|--|--|--|------------------------|--|
| CONSULTANT: AELCOM | | ADDRESS / OFFICE: | | SAMPLER: POPPY | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GIJPP) EES | | MOBILE: | ALS | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED Including SUITES (note - suite codes must be listed to attract suite prices) | | |

| | | | |
|--|--|--|--|
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| SAMPLE INFORMATION (note: S = Soil, W = Water) | | | | CONTAINER INFORMATION | | | |
|--|-----------------|--------|----------|-----------------------|----------------|---------------|--|
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 19 | QC153-170119 | S | 17/01/19 | | 1x JAR, 1x ASS | 2 | |
| 20 | QC253-170119 | S | | | ↓ | 2 | |
| 21 | QC353-170119 | W | | 15:30 | 1x Purple | 1 | |
| 22 | QC453-170119 | W | | | 2x Purples | 2 | |
| 23 | QC553-170119 | W | | | 1x Purple | 1 | |
| 24 | QC558-170119 | W | | | 1x Purple | 1 | |
| 25 | CPT126-BH47-205 | S | | 13:50 | 1x JAR, 1x ASS | 2 | |
| 26 | CPT126-BH47-205 | S | | | ↓ | | |
| 27 | CPT126-BH47-205 | S | | | ↓ | | |
| 28 | CPT126-BH47-205 | S | | | ↓ | | |
| 29 | CPT126-BH47-205 | S | | | ↓ | | |
| 30 | CPT126-BH47-205 | S | | | ↓ | | |

| RELIQUISHED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
|--------------------|-----------------------|--------------------|----------------------|--------------------|--|
| Name: POPPY | Date: 17/01/19 | Name: Alice | Date: 17/1/19 | Cont. Note No: | |
| Jr: AELCOM | Time: 3:45pm | Of: ALS | Time: 17:20 | Transport Co: | |

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected".
 Extra volume for QC or trace LORs etc.

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
 VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SO₂ = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic;
 Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

[REDACTED]
From: [REDACTED]@aecom.com>
Sent: Friday, 18 January 2019 1:28 PM
To: [REDACTED]
Subject: RE: 60592634

Hi [REDACTED]

Please analyse:

1. CPT094_BH35_170119_0.0 = IWRG621 1
2. CPT094_BH35_170119_0.5 = IWRG621 2
3. CPT098_BH36_170119_0.0 = IWRG621 13
4. CPT098_BH36_170119_0.5 = IWRG621 14
5. CPT117_BH44_170119_0.0 = IWRG621 7
6. CPT117_BH44_170119_0.5 = IWRG621 8
7. CPT126_BH47_170119_0.0 = IWRG621 24
8. CPT126_BH47_170119_0.5 = IWRG621 25
9. CPT094_BH35_170119_0.5 = Chromium Suite (EA033) 2
10. CPT094_BH35_170119_1.0 = Chromium Suite (EA033) 3
11. CPT098_BH36_170119_0.5 = Chromium Suite (EA033) 14
12. CPT098_BH36_170119_1.5 = Chromium Suite (EA033) 16
13. CPT117_BH44_170119_0.5 = Chromium Suite (EA033) 8
14. CPT117_BH44_170119_2.0 = Chromium Suite (EA033) 11
15. CPT126_BH47_170119_0.5 = Chromium Suite (EA033) 25
16. CPT126_BH47_170119_1.5 = Chromium Suite (EA033) 27
17. QC153_160119 = IWRG621 19
18. QC253_160119 = IWRG621(Triplicate, please forward to Eurofins) →
19. QC353_160119 = IWRG621 water equivalent 20
20. QC453_160119 = TPH(C6-C9)/BTEXN 21
21. QC557_160119 = TPH(C6-C9)/BTEXN 22
22. QC558_160119 = TPH(C6-C9)/BTEXN 23

At standard TAT thanks!

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008

T +61 3 9653 1234 F +61 3 9654 7117

<http://www.aecom.com>

Built to deliver a better world

-----Original Message-----

From: [REDACTED]@alsglobal.com]

Sent: Friday, 18 January 2019 7:04 AM

To: [REDACTED]

Cc: [REDACTED]

Subject: 60592634

Hi [REDACTED]

Please find attached samples on hold

Thanks

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900681

| | |
|---|---|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : ----</p> <p>Sampler : ----</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 3</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|---|---|

Dates

| | |
|---|--|
| <p>Date Samples Received : 17-Jan-2019 17:20</p> <p>Client Requested Due : 25-Jan-2019</p> <p>Date : </p> | <p>Issue Date : 19-Jan-2019</p> <p>Scheduled Reporting Date : 25-Jan-2019</p> |
|---|--|

Delivery Details

| | |
|--|---|
| <p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 2</p> <p>Receipt Detail : </p> | <p>Security Seal : Intact.</p> <p>Temperature : 6.0°C - Ice present</p> <p>No. of samples received / analysed : 29 / 17</p> |
|--|---|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **QC353 to be filtered through a 0.45um filter prior to the dissolved metals analysis.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|----------------------------------|--|
| Dissolved Mercury by FIMS : EG035F | | |
| QC353_170119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite A : EG020A-F | | |
| QC353_170119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite B : EG020B-F | | |
| QC353_170119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
WRG 621 |
|----------------------|-----------------------------|------------------|---|--|--------------------------------------|------------------------|
| EM1900681-001 | 17-Jan-2019 09:15 | CPT094_BH35_0.0 | | | ✓ | ✓ |
| EM1900681-002 | 17-Jan-2019 09:20 | CPT094_BH35_0.5 | | ✓ | ✓ | ✓ |
| EM1900681-003 | 17-Jan-2019 09:25 | CPT094_BH35_1.0 | | ✓ | | |
| EM1900681-004 | 17-Jan-2019 09:30 | CPT094_BH35_1.5 | ✓ | | | |
| EM1900681-005 | 17-Jan-2019 09:45 | CPT094_BH35_2.0 | ✓ | | | |
| EM1900681-006 | 17-Jan-2019 09:50 | CPT094_BH35_2.5 | ✓ | | | |
| EM1900681-007 | 17-Jan-2019 00:00 | CPT117_BH44_0.0 | | | ✓ | ✓ |
| EM1900681-008 | 17-Jan-2019 00:00 | CPT117_BH44_0.5 | | ✓ | ✓ | ✓ |
| EM1900681-009 | 17-Jan-2019 00:00 | CPT117_BH44_1.0 | ✓ | | | |
| EM1900681-010 | 17-Jan-2019 00:00 | CPT117_BH44_1.5 | ✓ | | | |
| EM1900681-011 | 17-Jan-2019 00:00 | CPT117_BH44_2.0 | | ✓ | | |
| EM1900681-012 | 17-Jan-2019 00:00 | CPT117_BH44_2.5 | ✓ | | | |
| EM1900681-013 | 17-Jan-2019 00:00 | CPT098_BH36_0.0 | | | ✓ | ✓ |
| EM1900681-014 | 17-Jan-2019 00:00 | CPT098_BH36_0.5 | | ✓ | ✓ | ✓ |
| EM1900681-015 | 17-Jan-2019 00:00 | CPT098_BH36_1.0 | ✓ | | | |
| EM1900681-016 | 17-Jan-2019 00:00 | CPT098_BH36_1.5 | | ✓ | | |
| EM1900681-017 | 17-Jan-2019 00:00 | CPT098_BH36_2.0 | ✓ | | | |
| EM1900681-018 | 17-Jan-2019 00:00 | CPT098_BH36_2.5 | ✓ | | | |
| EM1900681-019 | 17-Jan-2019 00:00 | QC153_170119 | | | ✓ | ✓ |
| EM1900681-024 | 17-Jan-2019 13:50 | CPT126_BH47_0.0 | | | ✓ | ✓ |
| EM1900681-025 | 17-Jan-2019 00:00 | CPT126_BH47_0.5 | | ✓ | ✓ | ✓ |
| EM1900681-026 | 17-Jan-2019 00:00 | CPT126_BH47_1.0 | ✓ | | | |
| EM1900681-027 | 17-Jan-2019 00:00 | CPT126_BH47_1.5 | | ✓ | | |
| EM1900681-028 | 17-Jan-2019 00:00 | CPT126_BH47_2.0 | ✓ | | | |
| EM1900681-029 | 17-Jan-2019 00:00 | CPT126_BH47_2.5 | ✓ | | | |



Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------------------|
| EM1900681-020 | 17-Jan-2019 15:30 | QC353_170119 | ✓ | |
| EM1900681-021 | 17-Jan-2019 15:30 | QC453_170119 | | ✓ |
| EM1900681-022 | 17-Jan-2019 15:30 | QC557_170119 | | ✓ |
| EM1900681-023 | 17-Jan-2019 15:30 | QC558_170119 | | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

| □ □ □
Client Sample ID(s) | Container | Due for
extraction | Due for
analysis | Samples Received | | Instructions Received | |
|------------------------------|--------------------------------|-----------------------|---------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| QC353_170119 | Clear Plastic Bottle - Natural | ---- | 17-Jan-2019 | 17-Jan-2019 | ✓ | 18-Jan-2019 | ✗ |

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email

AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

Email
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CERTIFICATE OF ANALYSIS

Work Order : **EM1900681**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : [REDACTED]
Site : Gas Import Jetty Pipeline Project (GIJPP) EES
Quote number : EN/096/18
No. of samples received : 29
No. of samples analysed : 17

Page : 1 of 27
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 17-Jan-2019 17:20
Date Analysis Commenced : 21-Jan-2019
Issue Date : 29-Jan-2019 15:48



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|-------------------------------------|---|
| [REDACTED] | Non-metals prep supervisor | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



□□□ □ □□□ □□□□

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- EA005P: EM1900681-20 pH has been analysed by manual EA005 method.
- QC353 was filtered through a 0.45µm filter prior to the dissolved metals analysis.
- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- EG048G: EM1900681 #1, Poor matrix spike recovery for hexavalent chromium due to matrix effects.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



□ □ □ □ □ □ □ □ □ □ □ □

| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT094_BH35_0.0 | CPT094_BH35_0.5 | CPT094_BH35_1.0 | CPT117_BH44_0.0 | CPT117_BH44_0.5 |
|--|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 09:15 | 17-Jan-2019 09:20 | 17-Jan-2019 09:25 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900681-001 | EM1900681-002 | EM1900681-003 | EM1900681-007 | EM1900681-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 4.9 | 4.9 | ---- | 4.6 | 4.6 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 7.8 | 7.9 | ---- | 5.5 |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | <2 | <2 | ---- | 15 |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | <0.02 | <0.02 | ---- | 0.02 |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | 0.007 | <0.005 | ---- | 0.007 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | <10 |
| EA033-C: Acid Neutralising Capacity | | | | | | | | | |
| Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | | ---- | 2.36 | 2.92 | ---- | ---- |
| acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | | ---- | 473 | 583 | ---- | ---- |
| sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | | ---- | 0.76 | 0.93 | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | 1.5 | ---- | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | <0.02 | <0.02 | ---- | 0.03 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | 20 |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | <1 | <1 | ---- | 1 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | <0.02 | <0.02 | ---- | 0.03 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | 20 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | <1 | <1 | ---- | 1 |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 22.3 | 28.2 | ---- | 6.8 | 18.6 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | | 24 | 23 | ---- | 8 | 12 |
| Lead | 7439-92-1 | 5 | mg/kg | | 16 | 16 | ---- | 10 | 20 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | <2 | <2 | ---- | <2 | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | | 10 | 8 | ---- | 4 | 8 |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | <2 | ---- | <2 | <2 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT094_BH35_0.0 | CPT094_BH35_0.5 | CPT094_BH35_1.0 | CPT117_BH44_0.0 | CPT117_BH44_0.5 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 09:15 | 17-Jan-2019 09:20 | 17-Jan-2019 09:25 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900681-001 | EM1900681-002 | EM1900681-003 | EM1900681-007 | EM1900681-008 |
| | | | | | Result | Result | Result | Result | Result |
| EG005T: Total Metals by ICP-AES - Continued | | | | | | | | | |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | | 8 | <5 | ---- | 14 | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | <1 | <1 | ---- | 1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 230 | 200 | ---- | 100 | 180 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | 0.7 | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | 0.7 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | 0.7 | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | <0.4 | ---- | <0.4 | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT094_BH35_0.0 | CPT094_BH35_0.5 | CPT094_BH35_1.0 | CPT117_BH44_0.0 | CPT117_BH44_0.5 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 09:15 | 17-Jan-2019 09:20 | 17-Jan-2019 09:25 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900681-001 | EM1900681-002 | EM1900681-003 | EM1900681-007 | EM1900681-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | <0.04 | ---- | <0.04 | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | <0.2 | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT094_BH35_0.0 | CPT094_BH35_0.5 | CPT094_BH35_1.0 | CPT117_BH44_0.0 | CPT117_BH44_0.5 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 09:15 | 17-Jan-2019 09:20 | 17-Jan-2019 09:25 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900681-001 | EM1900681-002 | EM1900681-003 | EM1900681-007 | EM1900681-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds (Non-halogenated) - Continued | | | | | | | | | |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | 0.6 | ---- | 0.6 | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | 1.2 | ---- | 1.2 | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT094_BH35_0.0 | CPT094_BH35_0.5 | CPT094_BH35_1.0 | CPT117_BH44_0.0 | CPT117_BH44_0.5 |
|--|----------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 09:15 | 17-Jan-2019 09:20 | 17-Jan-2019 09:25 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900681-001 | EM1900681-002 | EM1900681-003 | EM1900681-007 | EM1900681-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | <10 | ---- | <10 | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | <50 | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | <10 | ---- | <10 | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | 210 | <100 | ---- | 120 | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | 280 | <100 | ---- | 150 | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | 490 | <50 | ---- | 270 | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | <50 | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | 400 | <100 | ---- | 220 | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | 140 | <100 | ---- | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | 540 | <50 | ---- | 220 | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | <50 | ---- | <50 | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | <10 | ---- | <10 | <10 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 114 | 96.0 | ---- | 111 | 97.6 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 73.4 | 74.8 | ---- | 94.6 | 88.1 |



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|--|------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT094_BH35_0.0 | CPT094_BH35_0.5 | CPT094_BH35_1.0 | CPT117_BH44_0.0 | CPT117_BH44_0.5 |
| Client sampling date / time | | | | | 17-Jan-2019 09:15 | 17-Jan-2019 09:20 | 17-Jan-2019 09:25 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900681-001 | EM1900681-002 | EM1900681-003 | EM1900681-007 | EM1900681-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP074S: VOC Surrogates (Ultra-Trace) - Continued | | | | | | | | | |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 85.2 | 97.6 | ---- | 91.7 | 105 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 82.9 | 85.4 | ---- | 100 | 95.5 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 95.0 | 75.0 | ---- | 81.8 | 63.8 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 66.8 | 54.8 | ---- | 60.9 | 45.8 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | 128 | 96.2 | ---- | 118 | 87.3 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | 84.6 | 66.7 | ---- | 75.0 | 55.7 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | 59.6 | 46.8 | ---- | 55.3 | 40.7 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | 93.0 | 67.0 | ---- | 87.5 | 57.9 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | 114 | 90.1 | ---- | 108 | 83.5 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | 137 | 114 | ---- | 127 | 108 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT117_BH44_2.0 | CPT098_BH36_0.0 | CPT098_BH36_0.5 | CPT098_BH36_1.5 | QC153_170119 |
|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900681-011 | EM1900681-013 | EM1900681-014 | EM1900681-016 | EM1900681-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | ---- | 4.6 | 4.8 | ---- | 4.7 | |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.9 | ---- | 4.9 | 5.8 | ---- | |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 6 | ---- | 22 | 5 | ---- | |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | 0.03 | <0.02 | ---- | |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | ---- | <0.005 | <0.005 | ---- | |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | <10 | <10 | ---- | |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | ---- | 1.5 | 1.5 | ---- | |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | 0.03 | <0.02 | ---- | |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | 22 | <10 | ---- | |
| Liming Rate | ---- | 1 | kg CaCO3/t | <1 | ---- | 2 | <1 | ---- | |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | 0.03 | <0.02 | ---- | |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | 22 | <10 | ---- | |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | ---- | 2 | <1 | ---- | |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | ---- | 14.7 | 14.6 | ---- | 15.4 | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | ---- | <5 | <5 | ---- | <5 | |
| Cadmium | 7440-43-9 | 1 | mg/kg | ---- | <1 | <1 | ---- | <1 | |
| Copper | 7440-50-8 | 5 | mg/kg | ---- | 20 | 17 | ---- | 15 | |
| Lead | 7439-92-1 | 5 | mg/kg | ---- | 15 | 10 | ---- | 10 | |
| Molybdenum | 7439-98-7 | 2 | mg/kg | ---- | <2 | <2 | ---- | <2 | |
| Nickel | 7440-02-0 | 2 | mg/kg | ---- | 10 | 7 | ---- | 7 | |
| Selenium | 7782-49-2 | 5 | mg/kg | ---- | <5 | <5 | ---- | <5 | |
| Silver | 7440-22-4 | 2 | mg/kg | ---- | <2 | <2 | ---- | <2 | |
| Tin | 7440-31-5 | 5 | mg/kg | ---- | <5 | <5 | ---- | <5 | |
| Zinc | 7440-66-6 | 5 | mg/kg | ---- | 7 | <5 | ---- | <5 | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | ---- | <0.1 | <0.1 | ---- | <0.1 | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 | |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT117_BH44_2.0 | CPT098_BH36_0.0 | CPT098_BH36_0.5 | CPT098_BH36_1.5 | QC153_170119 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900681-011 | EM1900681-013 | EM1900681-014 | EM1900681-016 | EM1900681-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | ---- | 1 | <1 | ---- | <1 | |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | ---- | 210 | 250 | ---- | 130 | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | ---- | <0.1 | <0.1 | ---- | <0.1 | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | ---- | <0.2 | <0.2 | ---- | <0.2 | |
| Toluene | 108-88-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 | |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 | |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 | |
| Styrene | 100-42-5 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 | |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 | |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | ---- | <0.2 | <0.2 | ---- | <0.2 | |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 | |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | ---- | <1 | <1 | ---- | <1 | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | ---- | <0.02 | |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | ---- | <0.01 | |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | ---- | <0.4 | <0.4 | ---- | <0.4 | |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | ---- | <0.02 | |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | ---- | <0.01 | |
| Chloroform | 67-66-3 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | ---- | <0.02 | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | ---- | <0.01 | |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | ---- | <0.01 | |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | ---- | <0.02 | |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | ---- | <0.02 | |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | ---- | <0.04 | <0.04 | ---- | <0.04 | |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | ---- | <0.02 | |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | ---- | <0.01 | |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | ---- | <0.02 | |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | ---- | <0.02 | |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | ---- | <0.02 | |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT117_BH44_2.0 | CPT098_BH36_0.0 | CPT098_BH36_0.5 | CPT098_BH36_1.5 | QC153_170119 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900681-011 | EM1900681-013 | EM1900681-014 | EM1900681-016 | EM1900681-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT117_BH44_2.0 | CPT098_BH36_0.0 | CPT098_BH36_0.5 | CPT098_BH36_1.5 | QC153_170119 |
|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900681-011 | EM1900681-013 | EM1900681-014 | EM1900681-016 | EM1900681-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | ---- | 0.6 | 0.6 | 0.6 | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | ---- | 1.2 | 1.2 | 1.2 | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT117_BH44_2.0 | CPT098_BH36_0.0 | CPT098_BH36_0.5 | CPT098_BH36_1.5 | QC153_170119 |
|--|-------------------|-------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900681-011 | EM1900681-013 | EM1900681-014 | EM1900681-016 | EM1900681-019 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | ---- | <0.05 | <0.05 | ---- | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5 | 0.05 | mg/kg | | ---- | <0.05 | <0.05 | ---- | <0.05 |
| | 0-2 | | | | | | | | |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | ---- | <0.03 | <0.03 | ---- | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | ---- | <10 | <10 | ---- | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | ---- | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | ---- | <10 | <10 | ---- | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | ---- | 1360 | <100 | ---- | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | ---- | 260 | <100 | ---- | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | ---- | 1620 | <50 | ---- | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | ---- | 60 | <50 | ---- | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | ---- | 1520 | <100 | ---- | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | ---- | 130 | <100 | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | ---- | 1710 | <50 | ---- | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | ---- | 60 | <50 | ---- | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | ---- | <10 | <10 | ---- | <10 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | ---- | 112 | 110 | ---- | 112 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | ---- | 94.0 | 81.0 | ---- | 85.5 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | ---- | 94.3 | 89.8 | ---- | 90.5 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | ---- | 94.6 | 90.4 | ---- | 93.7 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | ---- | 97.5 | 63.2 | ---- | 73.6 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | ---- | 67.9 | 45.2 | ---- | 53.2 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | ---- | 129 | 92.6 | ---- | 94.4 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT117_BH44_2.0 | CPT098_BH36_0.0 | CPT098_BH36_0.5 | CPT098_BH36_1.5 | QC153_170119 |
|--|------------|-------|------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1900681-011 | EM1900681-013 | EM1900681-014 | EM1900681-016 | EM1900681-019 |
| | | | | Result | Result | Result | Result | Result |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | ---- | 83.8 | 41.1 | ---- | 46.2 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | ---- | 58.6 | 41.0 | ---- | 49.2 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | ---- | 95.4 | 60.4 | ---- | 65.9 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | ---- | 108 | 89.8 | ---- | 98.2 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | ---- | 141 | 116 | ---- | 130 |



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|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126_BH47_0.0 | CPT126_BH47_0.5 | CPT126_BH47_1.5 | ---- | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 13:50 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900681-024 | EM1900681-025 | EM1900681-027 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 4.6 | 5.3 | ---- | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 5.4 | 6.2 | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | 11 | <2 | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | <0.02 | <0.02 | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | 0.007 | <0.005 | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | 1.5 | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | 0.02 | <0.02 | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | 16 | <10 | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | 1 | <1 | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | 0.02 | <0.02 | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | 16 | <10 | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | 1 | <1 | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 12.8 | 20.1 | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | | 11 | 11 | ---- | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | | 12 | 10 | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | <2 | <2 | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | | 9 | 8 | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | <2 | ---- | ---- | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | | 8 | 6 | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |



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|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126_BH47_0.0 | CPT126_BH47_0.5 | CPT126_BH47_1.5 | ---- | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 13:50 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900681-024 | EM1900681-025 | EM1900681-027 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | 2 | <1 | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 130 | 130 | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | 1.1 | <0.5 | ---- | ---- | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | 1.1 | <0.2 | ---- | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | 1.1 | <0.5 | ---- | ---- | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | <0.4 | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | <0.04 | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |



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|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126_BH47_0.0 | CPT126_BH47_0.5 | CPT126_BH47_1.5 | ---- | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 13:50 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900681-024 | EM1900681-025 | EM1900681-027 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | <5 | ---- | ---- | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | <1 | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |



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|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126_BH47_0.0 | CPT126_BH47_0.5 | CPT126_BH47_1.5 | ---- | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 13:50 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900681-024 | EM1900681-025 | EM1900681-027 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | 0.6 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | 1.2 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |



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|--|--------------------------|-------|-------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126_BH47_0.0 | CPT126_BH47_0.5 | CPT126_BH47_1.5 | ---- | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 13:50 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900681-024 | EM1900681-025 | EM1900681-027 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | <10 | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | <10 | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | 130 | <100 | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | 170 | <100 | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | 300 | <50 | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | 250 | 110 | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | 250 | 110 | ---- | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | <50 | ---- | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | <10 | ---- | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 116 | 102 | ---- | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 82.8 | 72.1 | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 90.4 | 80.3 | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 88.8 | 86.8 | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 80.2 | 63.4 | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 56.7 | 45.4 | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | 124 | 85.2 | ---- | ---- | ---- |



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|--|------------|-------|------|-----------------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT126_BH47_0.0 | CPT126_BH47_0.5 | CPT126_BH47_1.5 | ---- | ---- |
| | | | | Client sampling date / time | 17-Jan-2019 13:50 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900681-024 | EM1900681-025 | EM1900681-027 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | 74.1 | 58.3 | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | 56.7 | 41.1 | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | 88.5 | 58.9 | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | 113 | 84.1 | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | 133 | 107 | ---- | ---- | ---- |



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|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC353_170119 | QC453_170119 | QC557_170119 | QC558_170119 | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900681-020 | EM1900681-021 | EM1900681-022 | EM1900681-023 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 6.54 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | <0.005 | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | <0.004 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |



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|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC353_170119 | QC453_170119 | QC557_170119 | QC558_170119 | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900681-020 | EM1900681-021 | EM1900681-022 | EM1900681-023 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |



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|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC353_170119 | QC453_170119 | QC557_170119 | QC558_170119 | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900681-020 | EM1900681-021 | EM1900681-022 | EM1900681-023 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |



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|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC353_170119 | QC453_170119 | QC557_170119 | QC558_170119 | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900681-020 | EM1900681-021 | EM1900681-022 | EM1900681-023 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 63.6 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 91.5 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 89.6 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 91.6 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 21.4 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 47.7 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 37.9 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 62.4 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 63.3 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 66.1 | ---- | ---- | ---- | ---- |



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|---|------------|------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC353_170119 | QC453_170119 | QC557_170119 | QC558_170119 | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | 17-Jan-2019 15:30 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900681-020 | EM1900681-021 | EM1900681-022 | EM1900681-023 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.25 | % | | 42.3 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.25 | % | | 93.4 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.25 | % | | 102 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.25 | % | | 101 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.25 | % | | 104 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.25 | % | | 118 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.25 | % | | 118 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.25 | % | | 110 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 95.0 | 97.9 | 94.8 | 96.9 | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 92.0 | 84.6 | 83.2 | 85.4 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 101 | 96.0 | 82.9 | 95.2 | ---- |



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| Sub-Matrix: SOIL | | □□□□ □ □□□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

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|---|-------------------|------------------|------|
| Sub-Matrix: WATER | | □□□□ □ □□□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 13 | 90 |
| 2-Chlorophenol-D4 | 93951-73-6 | 42 | 117 |
| 2,4,6-Tribromophenol | 118-79-6 | 52 | 140 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 49 | 136 |

| Sub-Matrix: WATER | | ☐☐☐☐ ☐ ☐☐☐ ☐☐ s ☐ | |
|--|------------|-------------------|-----|
| Compound | CAS Number | ☐☐% | ☐☐☐ |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 49 | 128 |
| 2-Fluorobiphenyl | 321-60-8 | 57 | 137 |
| Anthracene-d10 | 1719-06-8 | 67 | 137 |
| 4-Terphenyl-d14 | 1718-51-0 | 66 | 136 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900681 | Page | : 1 of 14 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 17-Jan-2019 17:20 |
| Order number | : ---- | Date Analysed | : 21-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 29-Jan-2019 15:49 |
| No. of samples received | : 29 | | |
| No. of samples analysed | : 17 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| Client Sample ID | ALS Sample ID | Compound | Method | LOR | Limits | Result |
|------------------|---------------|--------------------------|----------|-----|---------------|------------|
| CPT098_BH36_0.0 | EM1900681-013 | C10 - C36 Fraction (sum) | EP071-EM | 50 | < 1,000 mg/kg | 1620 mg/kg |

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT094_BH35_0.0 | CPT094_BH35_0.5 | CPT117_BH44_0.0 | CPT117_BH44_0.5 | CPT098_BH36_0.0 | | |
|--|--------------|------|---------|--------------------|--------|-----------------|-----------------|-----------------|-----------------|-----------------|---------|---------|
| | | | | Sampling date/time | | | | | | | 0000 00 | 0000 00 |
| | | | | | | | | | | | | |
| Compound | Method | LOR | Unit | 00 00 | 0000 | EM1900681-001 | EM1900681-002 | EM1900681-007 | EM1900681-008 | EM1900681-013 | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 4.9 | 4.9 | 4.6 | 4.6 | 4.6 | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | <5 | <5 | <5 | <5 | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | <1 | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 24 | 23 | 8 | 12 | 20 | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 16 | 16 | 10 | 20 | 15 | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | <2 | <2 | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 10 | 8 | 4 | 8 | 10 | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | <5 | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | <2 | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 8 | <5 | 14 | <5 | 7 | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | <1 | 1 | <1 | 1 | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 230 | 200 | 100 | 180 | 210 | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | 0.7 | <0.2 | <0.2 | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | <1 | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT094_BH35
_0.0 | CPT094_BH35
_0.5 | CPT117_BH44
_0.0 | CPT117_BH44
_0.5 | CPT098_BH36
_0.0 |
|--|--------------|------|-------|------------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 17-Jan-2019
09:15 | 17-Jan-2019
09:20 | 17-Jan-2019
15:00 | 17-Jan-2019
15:00 | 17-Jan-2019
15:00 |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1900681-001 | EM1900681-002 | EM1900681-007 | EM1900681-008 | EM1900681-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | 490 | <50 | 270 | <50 | 1620 |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT094_BH35_0.0 | CPT094_BH35_0.5 | CPT117_BH44_0.0 | CPT117_BH44_0.5 | CPT098_BH36_0.0 |
|--|--------------|------|---------|--------------------|-------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□ | □□□□ | 17-Jan-2019 09:15 | 17-Jan-2019 09:20 | 17-Jan-2019 15:00 | 17-Jan-2019 15:00 | 17-Jan-2019 15:00 |
| | | | | □□ □ | □□□□ | EM1900681-001 | EM1900681-002 | EM1900681-007 | EM1900681-008 | EM1900681-013 |
| | | | | □□ □ | □□ □ | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.9 | 4.9 | 4.6 | 4.6 | 4.6 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 24 | 23 | 8 | 12 | 20 |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 16 | 16 | 10 | 20 | 15 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 10 | 8 | 4 | 8 | 10 |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 8 | <5 | 14 | <5 | 7 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | <1 | 1 | <1 | 1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 230 | 200 | 100 | 180 | 210 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | 0.7 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | CPT094_BH35
_0.0 | CPT094_BH35
_0.5 | CPT117_BH44
_0.0 | CPT117_BH44
_0.5 | CPT098_BH36
_0.0 |
|--|--------------|------|-------|------------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 17-Jan-2019
09:15 | 17-Jan-2019
09:20 | 17-Jan-2019
15:00 | 17-Jan-2019
15:00 | 17-Jan-2019
15:00 |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1900681-001 | EM1900681-002 | EM1900681-007 | EM1900681-008 | EM1900681-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | 490 | <50 | 270 | <50 | 1620 |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT094_BH35_0.0 | CPT094_BH35_0.5 | CPT117_BH44_0.0 | CPT117_BH44_0.5 | CPT098_BH36_0.0 |
|--|--------------|------|---------|--------------------|--------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | 17-Jan-2019
09:15
EM1900681-001 | 17-Jan-2019
09:20
EM1900681-002 | 17-Jan-2019
15:00
EM1900681-007 | 17-Jan-2019
15:00
EM1900681-008 | 17-Jan-2019
15:00
EM1900681-013 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.9 | 4.9 | 4.6 | 4.6 | 4.6 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | <5 | <5 | <5 | <5 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 24 | 23 | 8 | 12 | 20 |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 16 | 16 | 10 | 20 | 15 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 10 | 8 | 4 | 8 | 10 |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 8 | <5 | 14 | <5 | 7 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | <1 | 1 | <1 | 1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 230 | 200 | 100 | 180 | 210 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | 0.7 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | Client sample ID | | CPT094_BH35
_0.0 | CPT094_BH35
_0.5 | CPT117_BH44
_0.0 | CPT117_BH44
_0.5 | CPT098_BH36
_0.0 |
|--|--------------|------|-------|------------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 17-Jan-2019
09:15 | 17-Jan-2019
09:20 | 17-Jan-2019
15:00 | 17-Jan-2019
15:00 | 17-Jan-2019
15:00 |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1900681-001 | EM1900681-002 | EM1900681-007 | EM1900681-008 | EM1900681-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | 490 | <50 | 270 | <50 | 1620 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT098_BH36_0.5 | QC153_17011_9 | CPT126_BH47_0.0 | CPT126_BH47_0.5 | ---- |
|---|--------------|------|---------|------------------|---------|-------------------|-------------------|-------------------|-------------------|-------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 17-Jan-2019 15:00 | 17-Jan-2019 15:00 | 17-Jan-2019 13:50 | 17-Jan-2019 15:00 | ---- |
| Compound | | | | □□□□ □□ | □□□□ □□ | EM1900681-014 | EM1900681-019 | EM1900681-024 | EM1900681-025 | ----- |
| Method | LOR | Unit | | □□ □□ | □□ □□ | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 4.8 | 4.7 | 4.6 | 5.3 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | <5 | <5 | <5 | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 17 | 15 | 11 | 11 | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 10 | 10 | 12 | 10 | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | <2 | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 7 | 7 | 9 | 8 | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 | <5 | 8 | 6 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | <1 | 2 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 250 | 130 | 130 | 130 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | 1.1 | <0.2 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT098_BH36_0.5 | QC153_17011_9 | CPT126_BH47_0.0 | CPT126_BH47_0.5 | ---- |
|--|--------------|------|-------|--------------------|---------|-------------------|-------------------|-------------------|-------------------|-------|
| | | | | Sampling date/time | | 17-Jan-2019 15:00 | 17-Jan-2019 15:00 | 17-Jan-2019 13:50 | 17-Jan-2019 15:00 | ---- |
| Compound | Method | LOR | Unit | □□□□ □□ | □□□□ □□ | EM1900681-014 | EM1900681-019 | EM1900681-024 | EM1900681-025 | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | <50 | 300 | <50 | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT098_BH36_0.5 | QC153_170119 | CPT126_BH47_0.0 | CPT126_BH47_0.5 | ---- | | |
|--|--------------|------|---------|--------------------|--------|-----------------|--------------|-----------------|-----------------|------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | Compound | Method | | | | | | LOR | Unit |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.8 | 4.7 | 4.6 | 5.3 | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 17 | 15 | 11 | 11 | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 10 | 10 | 12 | 10 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | <2 | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 7 | 7 | 9 | 8 | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | <5 | <5 | 8 | 6 | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | <1 | 2 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 250 | 130 | 130 | 130 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | 1.1 | <0.2 | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT098_BH36
_0.5 | QC153_17011
9 | CPT126_BH47
_0.0 | CPT126_BH47
_0.5 | ---- |
|--|--------------|------|-------|--------------------|----------------------------|----------------------------|----------------------|----------------------|----------------------|----------------------|-------|
| | | | | Sampling date/time | □ □ □ □ □ □ | □ □ □ □ □ □ | 17-Jan-2019
15:00 | 17-Jan-2019
15:00 | 17-Jan-2019
13:50 | 17-Jan-2019
15:00 | ---- |
| | | | | | □ □ □ □ □ □
□ □ □ □ □ □ | □ □ □ □ □ □
□ □ □ □ □ □ | EM1900681-014 | EM1900681-019 | EM1900681-024 | EM1900681-025 | ----- |
| Compound | Method | LOR | Unit | | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 100 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 10 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 650 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 10000 | <50 | <50 | 300 | <50 | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT098_BH36_0.5 | QC153_170119 | CPT126_BH47_0.0 | CPT126_BH47_0.5 | ---- | | |
|--|--------------|------|---------|--------------------|--------|-----------------|--------------|-----------------|-----------------|------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | Compound | Method | | | | | | LOR | Unit |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.8 | 4.7 | 4.6 | 5.3 | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | <5 | <5 | <5 | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 17 | 15 | 11 | 11 | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 10 | 10 | 12 | 10 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | <2 | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 7 | 7 | 9 | 8 | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | 8 | 6 | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | <1 | 2 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 250 | 130 | 130 | 130 | ---- | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | 1.1 | <0.2 | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

Sampling date/time

[illegible]

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900681 | Page | : 1 of 23 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 17-Jan-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 21-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 29-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : Gas Import Jetty Pipeline Project (GIJPP) EES | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 29 | | |
| No. of samples analysed | : 17 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□ □ □ □ □ □ □ □

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□ □ □ □ □ □ □ □

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

□ □ □ □ □ □ □ □

Non-metals prep supervisor
Senior Inorganic Chemist
Senior Inorganic Instrument Chemist
Senior Acid Sulfate Soil Chemist
Senior Organic Chemist

□ □ □ □ □ □ □ □ □ □ □ □

Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2150472) | | | | | | | | | |
| EM1900654-005 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 7.5 | 7.5 | 0.00 | 0% - 20% |
| EM1900681-025 | CPT126_BH47_0.5 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.3 | 5.4 | 1.87 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2153473) | | | | | | | | | |
| EM1900681-002 | CPT094_BH35_0.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 7.8 | 7.7 | 1.29 | 0% - 20% |
| EM1900682-014 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.08 | 0.07 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 47 | 45 | 4.45 | 0% - 20% |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 4.5 | 4.6 | 2.20 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2153473) | | | | | | | | | |
| EM1900681-002 | CPT094_BH35_0.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.007 | 0.007 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EM1900682-014 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.009 | 0.009 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA033-C: Acid Neutralising Capacity (QC Lot: 2153473) | | | | | | | | | |
| EM1900681-002 | CPT094_BH35_0.5 | EA033: Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | 2.36 | 2.35 | 0.463 | 0% - 20% |
| | | EA033: sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | 0.76 | 0.75 | 0.00 | 0% - 20% |
| | | EA033: acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | 473 | 470 | 0.463 | 0% - 20% |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2149039) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EA055: Moisture Content | ---- | 0.1 | % | 22.3 | 22.4 | 0.604 | 0% - 20% |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|-------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2149039) - continued | | | | | | | | | |
| EM1900682-002 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 22.6 | 21.5 | 4.74 | 0% - 20% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2148799) | | | | | | | | | |
| EM1900601-003 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 22 | 24 | 9.34 | 0% - 50% |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 20 | 13 | 43.7 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 14 | 14 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 42 | 36 | 17.2 | No Limit |
| EM1900601-050 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 37 | 43 | 15.1 | 0% - 20% |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 21 | 24 | 13.4 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 38 | 36 | 3.93 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 105 | 108 | 2.99 | 0% - 20% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2148801) | | | | | | | | | |
| EM1900681-008 | CPT117_BH44_0.5 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 8 | 8 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 12 | 12 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 20 | 20 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900682-008 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005T: Total Metals by ICP-AES (QC Lot: 2148801) - continued | | | | | | | | | |
| EM1900682-008 | Anonymous | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2148800) | | | | | | | | | |
| EM1900601-003 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900601-050 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2148802) | | | | | | | | | |
| EM1900681-008 | CPT117_BH44_0.5 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900682-008 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2148770) | | | | | | | | | |
| EM1900601-020 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900681-025 | CPT126_BH47_0.5 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2151084) | | | | | | | | | |
| EM1900681-008 | CPT117_BH44_0.5 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900533-006 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2145722) | | | | | | | | | |
| EM1900668-001 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 220 | 210 | 0.00 | No Limit |
| EM1900681-014 | CPT098_BH36_0.5 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 250 | 210 | 19.9 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2147757) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900682-002 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2145440) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900682-002 | Anonymous | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| EP074H: Naphthalene (QC Lot: 2145440) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900682-002 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|-------------------------------------|------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2145440) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP074-UT: 1.1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1.2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.1.1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| | | EM1900682-002 | Anonymous | EP074-UT: 1.1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 |
| EP074-UT: cis-1.2-Dichloroethene | 156-59-2 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: 1.1.1-Trichloroethane | 71-55-6 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: Vinyl chloride | 75-01-4 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: Chloroform | 67-66-3 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: 1.2-Dichloroethane | 107-06-2 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: Trichloroethene | 79-01-6 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: Tetrachloroethene | 127-18-4 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: Chlorobenzene | 108-90-7 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | | | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| EP074-UT: Methylene chloride | 75-09-2 | | | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2147755) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|----------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2147755) - continued | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | 0-2 | | | | | | | |
| EM1900682-002 | Anonymous | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | 0-2 | | | | | | | |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2147755) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900682-002 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2147755) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900682-002 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2147755) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|-----------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2147755) - continued | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900682-002 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2145440) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900682-002 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2147756) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | 210 | 190 | 9.06 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | 280 | 250 | 14.5 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2147756) - continued | | | | | | | | | |
| EM1900682-002 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2145440) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900682-002 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2147756) | | | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | 400 | 350 | 13.1 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | 140 | 140 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900682-002 | Anonymous | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2145539) | | | | | | | | | |
| EM1900615-001 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.21 | 7.24 | 0.415 | 0% - 20% |
| EM1900610-009 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 8.30 | 8.28 | 0.241 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2147688) | | | | | | | | | |
| EM1900641-029 | Anonymous | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2147692) | | | | | | | | | |
| EM1900655-004 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900749-004 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.002 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2147692) - continued | | | | | | | | | |
| EM1900749-004 | Anonymous | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.065 | 0.067 | 1.86 | 0% - 50% |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2147689) | | | | | | | | | |
| EM1900649-016 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900641-029 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2146936) | | | | | | | | | |
| EM1900641-029 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900681-020 | QC353_170119 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2145901) | | | | | | | | | |
| EM1900680-010 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | 0.319 | 0.308 | 3.48 | 0% - 20% |
| EK040P: Fluoride by PC Titrator (QC Lot: 2145536) | | | | | | | | | |
| EM1900533-002 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900596-005 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.3 | 0.3 | 0.00 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2150300) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2145257) | | | | | | | | | |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074G: Trihalomethanes (QC Lot: 2145257) - continued | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2150299) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | | 205-82-3 | | | | | | |
| | | EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Dibenzo(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2145256) | | | | | | | | | |
| EM1900632-037 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900594-029 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2145260) | | | | | | | | | |
| EM1900681-021 | QC453_170119 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900682-027 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2150298) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2145256) | | | | | | | | | |
| EM1900632-037 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900594-029 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2145260) | | | | | | | | | |
| EM1900681-021 | QC453_170119 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900682-027 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2150298) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--------------------------------|------------------|----------------------------|----------------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080: BTEXN (QC Lot: 2145256) | | | | | | | | | |
| EM1900632-037 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900594-029 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2145260) | | | | | | | | | |
| EM1900681-021 | QC453_170119 | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900682-027 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA033-A: Actual Acidity (QCLot: 2153473) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 89.1 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2153473) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 94.4 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-C: Acid Neutralising Capacity (QCLot: 2153473) | | | | | | | | |
| EA033: Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | <0.01 | 10 % CaCO3 | 106 | 70 | 130 |
| EA033: acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033: sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | <0.01 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES (QCLot: 2148799) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 92.4 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 84.0 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 84.3 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 88.2 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 100.0 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 92.1 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 97.1 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 84.0 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 102 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 89.2 | 79 | 110 |
| EG005T: Total Metals by ICP-AES (QCLot: 2148801) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 91.9 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 85.8 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 85.4 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 89.8 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 88.9 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 94.5 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 96.6 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 84.1 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 85.1 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 91.7 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2148800) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 89.9 | 77 | 104 |



Sub-Matrix: **SOIL**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2148802) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 86.4 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2148770) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 101 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2151084) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 99.2 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2145722) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 88.8 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2147757) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 118 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2145440) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 98.5 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 116 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 110 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 106 | 66 | 115 |
| | 106-42-3 | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 95.9 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 100 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2145440) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 86.8 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2145440) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 119 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 93.0 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 87.4 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 94.1 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 91.2 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 83.0 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 80.4 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 74.4 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 84.3 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 95.3 | 66 | 117 |
| EP074-UT: 1,1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 80.2 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 112 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 86.2 | 71 | 118 |
| EP074-UT: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 80.6 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 102 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 98.9 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 88.4 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 84.3 | 73 | 110 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074I: Volatile Halogenated Compounds (QCLot: 2145440) - continued | | | | | | | | |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 102 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2147755) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 4 mg/kg | # 68.2 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 77.4 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 81.0 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 93.8 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 89.6 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 89.2 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 82.0 | 65 | 124 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 8 mg/kg | 92.1 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 8 mg/kg | 80.2 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2147755) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 4 mg/kg | 67.4 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 4 mg/kg | 78.6 | 65 | 126 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 8 mg/kg | 80.3 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 4 mg/kg | 74.9 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 4 mg/kg | 78.0 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 24 mg/kg | 64.4 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 24 mg/kg | 87.8 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 24 mg/kg | 92.2 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 24 mg/kg | 98.6 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 20 mg/kg | 86.9 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147755) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 70.6 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 76.6 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 69.9 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 85.1 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 86.3 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2.2 mg/kg | 75.4 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 96.1 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 94.2 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 94.2 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 103 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 8 mg/kg | 121 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 72.0 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 130 | 72 | 134 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147755) - continued | | | | | | | | |
| EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 4 mg/kg | # 141 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 122 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2147755) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 95.4 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 77.8 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 123 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 99.6 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 93.1 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 76.5 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 90.5 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 96.3 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 100 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 100 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 103 | 64 | 137 |
| EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 102 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 99.5 | 72 | 132 |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 101 | 42 | 160 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 4 mg/kg | # 18.8 | 55 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 109 | 73 | 132 |
| EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 113 | 75 | 134 |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 111 | 73 | 133 |
| EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 112 | 67 | 133 |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 80.7 | 67 | 135 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145440) | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 110 | 63 | 122 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147756) | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 110 | 70 | 120 |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 116 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 114 | 77 | 117 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145440) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 107 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTE | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- |
| | X | | | | | | | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2147756) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 117 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 116 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 107 | 68 | 124 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2147688) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 94.4 | 84 | 116 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2147692) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 97.2 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.8 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.1 | 83 | 105 |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 98.9 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 99.2 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 100 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 99.1 | 83 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 102 | 85 | 109 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2147689) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 93.9 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2146936) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 109 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145901) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 88.7 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2145536) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 95.8 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2150300) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 80.6 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2145257) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 102 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2145257) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 104 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 92.6 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 104 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 77.3 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 82.4 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 76.4 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 70.7 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 85.4 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 93.9 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 98.8 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 98.7 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 87.6 | 76 | 112 |
| EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 103 | 81 | 124 |

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2145257) - continued | | | | | | | | |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 112 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2145257) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 101 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 101 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 97.9 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 109 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2145257) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 83.2 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2150299) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 92.7 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 111 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 97.6 | 53 | 117 |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 105 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 100 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 99.3 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 106 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 102 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 104 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 97.5 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | 5 µg/L | 97.0 | 56 | 131 |
| | 205-82-3 | | | | | | | |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 99.8 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 98.2 | 54 | 124 |
| EP075(SIM): Indeno(1,2,3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 97.6 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 99.1 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 100 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2146988) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 93.8 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 107 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 120 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 109 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 124 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 124 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 20 µg/L | 116 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5 | 2 | µg/L | <2 | 30 µg/L | 117 | 53 | 125 |
| | 8-90-2 | | | | | | | |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 121 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2146988) | | | | | | | | |

Laboratory Control Spike (LCS) Report

[illegible]



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB) Report | Laboratory Control Spike (LCS) Report | | | |
|--|----------|------|--------|--------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP080: BTEXN (QCLot: 2145256) - continued | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 108 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 108 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 110 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 107 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 106 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 103 | 70 | 125 |
| EP080: BTEXN (QCLot: 2145260) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 84.9 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 86.9 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 86.8 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 89.7 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 93.4 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 95.7 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2148799) | | | | | | | |
| EM1900601-006 | Anonymous | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 91.8 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 87.1 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 92.9 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 94.4 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 86.9 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 80.4 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 86.0 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 97.8 | 74 | 128 |
| EG005T: Total Metals by ICP-AES (QCLot: 2148801) | | | | | | | |
| EM1900681-013 | CPT098_BH36_0.0 | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 90.1 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 90.4 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 92.8 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 91.7 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 86.6 | 79 | 117 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2148801) - continued | | | | | | | |
| EM1900681-013 | CPT098_BH36_0.0 | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 91.8 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 89.4 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 91.4 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2148800) | | | | | | | |
| EM1900601-006 | Anonymous | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 88.7 | 76 | 116 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2148802) | | | | | | | |
| EM1900681-013 | CPT098_BH36_0.0 | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 97.1 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2148770) | | | | | | | |
| EM1900681-001 | CPT094_BH35_0.0 | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | # 3.82 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2151084) | | | | | | | |
| EM1900533-011 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 87.3 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2145722) | | | | | | | |
| EM1900668-011 | Anonymous | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 112 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2147757) | | | | | | | |
| EM1900681-008 | CPT117_BH44_0.5 | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 127 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2145440) | | | | | | | |
| EM1900681-002 | CPT094_BH35_0.5 | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 70.7 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 81.2 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2145440) | | | | | | | |
| EM1900681-002 | CPT094_BH35_0.5 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 54.3 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 64.2 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 79.0 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2147755) | | | | | | | |
| EM1900681-002 | CPT094_BH35_0.5 | EP075-EM: 2-Chlorophenol | 95-57-8 | 2 mg/kg | 75.4 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 2 mg/kg | 110 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 2 mg/kg | 75.0 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2147755) | | | | | | | |
| EM1900681-002 | CPT094_BH35_0.5 | EP075-EM: Phenol | 108-95-2 | 2 mg/kg | 87.5 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 2 mg/kg | 75.6 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147755) | | | | | | | |
| EM1900681-002 | CPT094_BH35_0.5 | EP075-EM: Acenaphthene | 83-32-9 | 2 mg/kg | 80.2 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 2 mg/kg | 112 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145440) | | | | | | | |
| EM1900681-002 | CPT094_BH35_0.5 | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 72.8 | 43 | 111 |

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|-------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2147756) | | | | | | | |
| EM1900681-007 | CPT117_BH44_0.0 | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 106 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 112 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 111 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145440) | | | | | | | |
| EM1900681-002 | CPT094_BH35_0.5 | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 69.3 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2147756) | | | | | | | |
| EM1900681-007 | CPT117_BH44_0.0 | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 113 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 113 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 102 | 44 | 126 |
| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2147692) | | | | | | | |
| EM1900655-004 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 97.4 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 94.0 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 94.5 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 91.2 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 97.8 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 97.9 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2147689) | | | | | | | |
| EM1900649-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 87.2 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2146936) | | | | | | | |
| EM1900656-019 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 109 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145901) | | | | | | | |
| EM1900680-011 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 mg/L | 98.3 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2145536) | | | | | | | |
| EM1900596-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 92.6 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2145257) | | | | | | | |
| EM1900529-025 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 111 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 89.4 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2145257) | | | | | | | |
| EM1900529-025 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 99.8 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145256) | | | | | | | |
| EM1900529-025 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 83.9 | 43 | 125 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145260) | | | | | | | |

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 Work Order : EM1900681
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145260) - continued | | | | | | | |
| EM1900679-005 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 73.7 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145256) | | | | | | | |
| EM1900529-025 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 83.9 | 44 | 122 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145260) | | | | | | | |
| EM1900679-005 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 72.9 | 44 | 122 |
| EP080: BTEXN (QCLot: 2145256) | | | | | | | |
| EM1900529-025 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 103 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 105 | 72 | 132 |
| EP080: BTEXN (QCLot: 2145260) | | | | | | | |
| EM1900679-005 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 100 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 102 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|---|-------------------------|------------------------------------|
| Work Order | : EM1900681 | Page | : 1 of 16 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 17-Jan-2019 |
| Site | : Gas Import Jetty Pipeline Project (GIJPP) EES | Issue Date | : 29-Jan-2019 |
| Sampler | : [REDACTED] | No. of samples received | : 29 |
| Order number | : | No. of samples analysed | : 17 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank** value outliers occur.
- **NO Duplicate** outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|-----------------------|------------|--------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | QC-2147755-001 | ---- | 2-Chlorophenol | 95-57-8 | 68.2 % | 69-123% | Recovery less than lower control limit |
| EP075B: Polynuclear Aromatic Hydrocarbons | QC-2147755-001 | ---- | Dibenz(a,h)anthracene | 53-70-3 | 141 % | 72-135% | Recovery greater than upper control limit |
| EP075I: Organochlorine Pesticides | QC-2147755-001 | ---- | Endrin | 72-20-8 | 18.8 % | 55-148% | Recovery less than lower control limit |
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | EM1900681--001 | CPT094_BH35_0.0 | Hexavalent Chromium | 18540-29-9 | 3.82 % | 58-114% | Recovery less than lower data quality objective |

Matrix: **WATER**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|----------|------------|-------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2146988-001 | ---- | 4,4'-DDT | 50-29-3 | 140 % | 59-128% | Recovery greater than upper control limit |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
QC353_170119 | ---- | ---- | ---- | 21-Jan-2019 | 17-Jan-2019 | 4 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| Semivolatile Organic Compounds - Waste Classification | 0 | 6 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 8 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 7 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 6 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 7 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001) | | 17-Jan-2019 | 24-Jan-2019 | 24-Jan-2019 | ✔ | 24-Jan-2019 | 24-Jan-2019 | ✔ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA033) | | 17-Jan-2019 | 25-Jan-2019 | 17-Jan-2020 | ✔ | 25-Jan-2019 | 25-Apr-2019 | ✔ |
| CPT094_BH35_0.5, | CPT094_BH35_1.0, | | | | | | | |
| CPT117_BH44_0.5, | CPT117_BH44_2.0, | | | | | | | |
| CPT098_BH36_0.5, | CPT098_BH36_1.5, | | | | | | | |
| CPT126_BH47_0.5, | CPT126_BH47_1.5 | | | | | | | |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA033) | | 17-Jan-2019 | 25-Jan-2019 | 17-Jan-2020 | ✔ | 25-Jan-2019 | 25-Apr-2019 | ✔ |
| CPT094_BH35_0.5, | CPT094_BH35_1.0, | | | | | | | |
| CPT117_BH44_0.5, | CPT117_BH44_2.0, | | | | | | | |
| CPT098_BH36_0.5, | CPT098_BH36_1.5, | | | | | | | |
| CPT126_BH47_0.5, | CPT126_BH47_1.5 | | | | | | | |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen (EA033) | | 17-Jan-2019 | 25-Jan-2019 | 17-Jan-2020 | ✔ | 25-Jan-2019 | 25-Apr-2019 | ✔ |
| CPT094_BH35_0.5, | CPT094_BH35_1.0, | | | | | | | |
| CPT117_BH44_0.5, | CPT117_BH44_2.0, | | | | | | | |
| CPT098_BH36_0.5, | CPT098_BH36_1.5, | | | | | | | |
| CPT126_BH47_0.5, | CPT126_BH47_1.5 | | | | | | | |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA033) | | 17-Jan-2019 | 25-Jan-2019 | 17-Jan-2020 | ✔ | 25-Jan-2019 | 25-Apr-2019 | ✔ |
| CPT094_BH35_0.5, | CPT094_BH35_1.0, | | | | | | | |
| CPT117_BH44_0.5, | CPT117_BH44_2.0, | | | | | | | |
| CPT098_BH36_0.5, | CPT098_BH36_1.5, | | | | | | | |
| CPT126_BH47_0.5, | CPT126_BH47_1.5 | | | | | | | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method
Container / Client Sample ID(s) | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen (EA033)
CPT094_BH35_0.5,
CPT117_BH44_0.5,
CPT098_BH36_0.5,
CPT126_BH47_0.5, | CPT094_BH35_1.0,
CPT117_BH44_2.0,
CPT098_BH36_1.5,
CPT126_BH47_1.5 | 17-Jan-2019 | 25-Jan-2019 | 17-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT094_BH35_0.0,
CPT117_BH44_0.0,
CPT098_BH36_0.0,
QC153_170119,
CPT126_BH47_0.5 | CPT094_BH35_0.5,
CPT117_BH44_0.5,
CPT098_BH36_0.5,
CPT126_BH47_0.0, | 17-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 31-Jan-2019 | ✓ |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT094_BH35_0.0,
CPT117_BH44_0.0,
CPT098_BH36_0.0,
QC153_170119,
CPT126_BH47_0.5 | CPT094_BH35_0.5,
CPT117_BH44_0.5,
CPT098_BH36_0.5,
CPT126_BH47_0.0, | 17-Jan-2019 | 24-Jan-2019 | 16-Jul-2019 | ✓ | 25-Jan-2019 | 16-Jul-2019 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
CPT094_BH35_0.0,
CPT117_BH44_0.0,
CPT098_BH36_0.0,
QC153_170119,
CPT126_BH47_0.5 | CPT094_BH35_0.5,
CPT117_BH44_0.5,
CPT098_BH36_0.5,
CPT126_BH47_0.0, | 17-Jan-2019 | 24-Jan-2019 | 14-Feb-2019 | ✓ | 25-Jan-2019 | 14-Feb-2019 | ✓ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
CPT094_BH35_0.0,
CPT117_BH44_0.0,
CPT098_BH36_0.0,
QC153_170119,
CPT126_BH47_0.5 | CPT094_BH35_0.5,
CPT117_BH44_0.5,
CPT098_BH36_0.5,
CPT126_BH47_0.0, | 17-Jan-2019 | 22-Jan-2019 | 14-Feb-2019 | ✓ | 23-Jan-2019 | 29-Jan-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF)
CPT094_BH35_0.0,
CPT117_BH44_0.0,
CPT098_BH36_0.0,
QC153_170119,
CPT126_BH47_0.5 | CPT094_BH35_0.5,
CPT117_BH44_0.5,
CPT098_BH36_0.5,
CPT126_BH47_0.0, | 17-Jan-2019 | 23-Jan-2019 | 31-Jan-2019 | ✓ | 24-Jan-2019 | 06-Feb-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T) | | 17-Jan-2019 | 21-Jan-2019 | 14-Feb-2019 | ✓ | 22-Jan-2019 | 14-Feb-2019 | ✓ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM) | | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 17-Jan-2019 | 21-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 24-Jan-2019 | ✓ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 17-Jan-2019 | 21-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 24-Jan-2019 | ✓ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 17-Jan-2019 | 21-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 24-Jan-2019 | ✓ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 17-Jan-2019 | 21-Jan-2019 | 24-Jan-2019 | ✔ | 23-Jan-2019 | 24-Jan-2019 | ✔ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM) | | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 17-Jan-2019 | 21-Jan-2019 | 24-Jan-2019 | ✔ | 23-Jan-2019 | 24-Jan-2019 | ✔ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM) | | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| CPT094_BH35_0.0, | CPT094_BH35_0.5, | | | | | | | |
| CPT117_BH44_0.0, | CPT117_BH44_0.5, | | | | | | | |
| CPT098_BH36_0.0, | CPT098_BH36_0.5, | | | | | | | |
| QC153_170119, | CPT126_BH47_0.0, | | | | | | | |
| CPT126_BH47_0.5 | | | | | | | | |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
QC353_170119 | 17-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 17-Jan-2019 | ✗ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Natural (EG020B-F)
QC353_170119 | 17-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 16-Jul-2019 | ✓ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Natural (EG035F)
QC353_170119 | 17-Jan-2019 | ---- | ---- | ---- | 24-Jan-2019 | 14-Feb-2019 | ✓ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Opaque plastic bottle - NaOH (EG050F)
QC353_170119 | 17-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 14-Feb-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| Opaque plastic bottle - NaOH (EK026SF)
QC353_170119 | 17-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
QC353_170119 | 17-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 14-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
QC353_170119 | 17-Jan-2019 | 23-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC353_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC353_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC353_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC353_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
QC353_170119 | 17-Jan-2019 | 23-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC353_170119 | 17-Jan-2019 | 22-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC353_170119 | 17-Jan-2019 | 22-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC353_170119 | 17-Jan-2019 | 22-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC353_170119 | 17-Jan-2019 | 23-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC353_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC453_170119, QC558_170119 | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 31-Jan-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC353_170119 | 17-Jan-2019 | 23-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC353_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC453_170119, QC558_170119 | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 31-Jan-2019 | ✓ |

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 Work Order : EM1900681
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080: BTEXN | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC353_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC453_170119,
QC558_170119 | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 31-Jan-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | Quality Control Specification | |
|---|----------|-------|---------|----------|----------|-------------------------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | | Evaluation |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 4 | 38 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 38 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 38 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Laboratory Control Samples (LCS) | | | | | | | |
|---|------------|---|----|-------|------|---|--------------------------------|
| Dissolved Mercury by FIMS | EG035F | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 31 | 6.45 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

Method Blanks (MB)



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 31 | 6.45 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 8 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 7 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 6 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 7 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 31 | 6.45 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|--|
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazine. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |



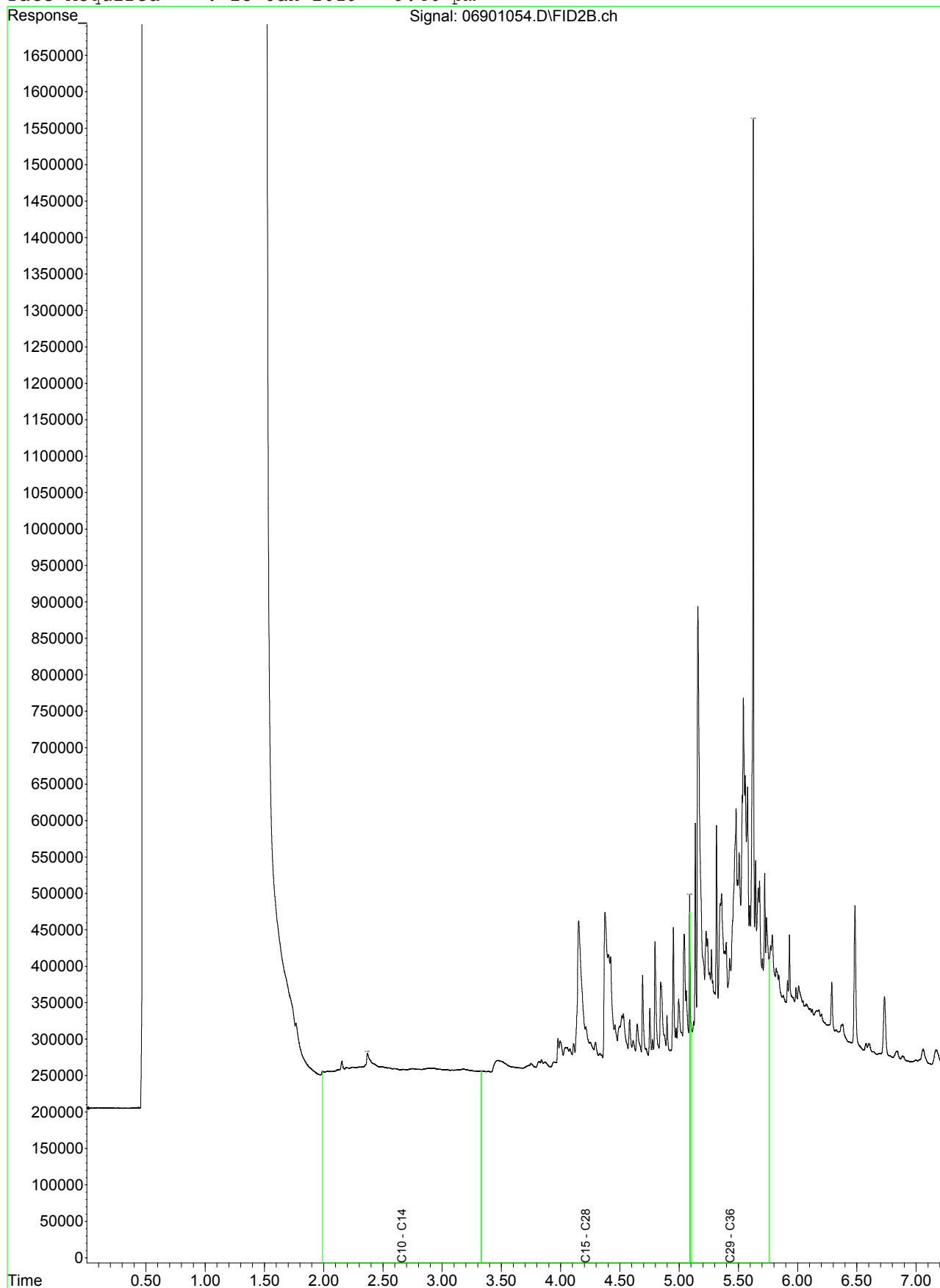
| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |

| Preparation Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|---|
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |

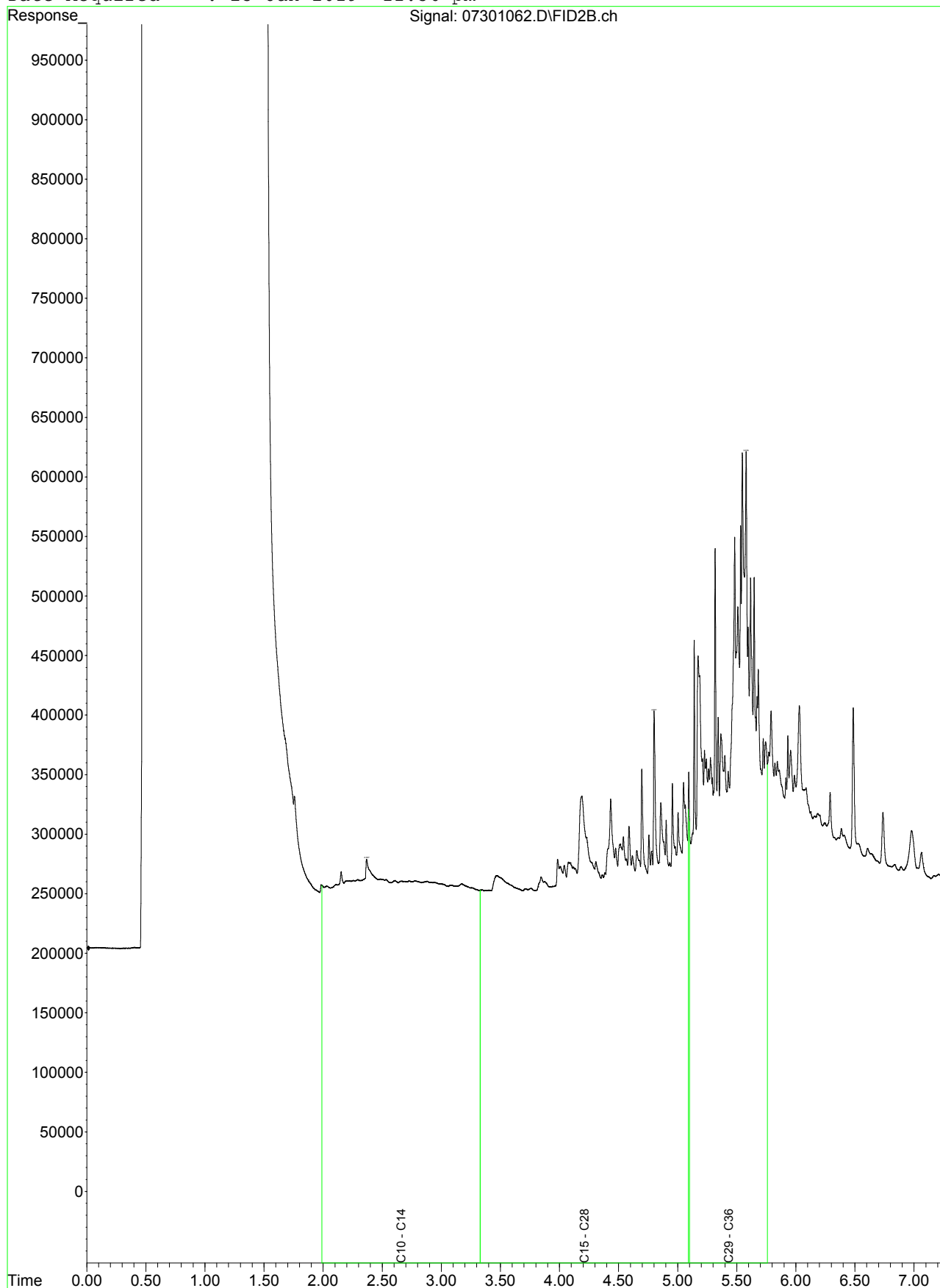


| <i>Preparation Methods</i> | <i>Method</i> | <i>Matrix</i> | <i>Method Descriptions</i> |
|---|---------------|---------------|--|
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

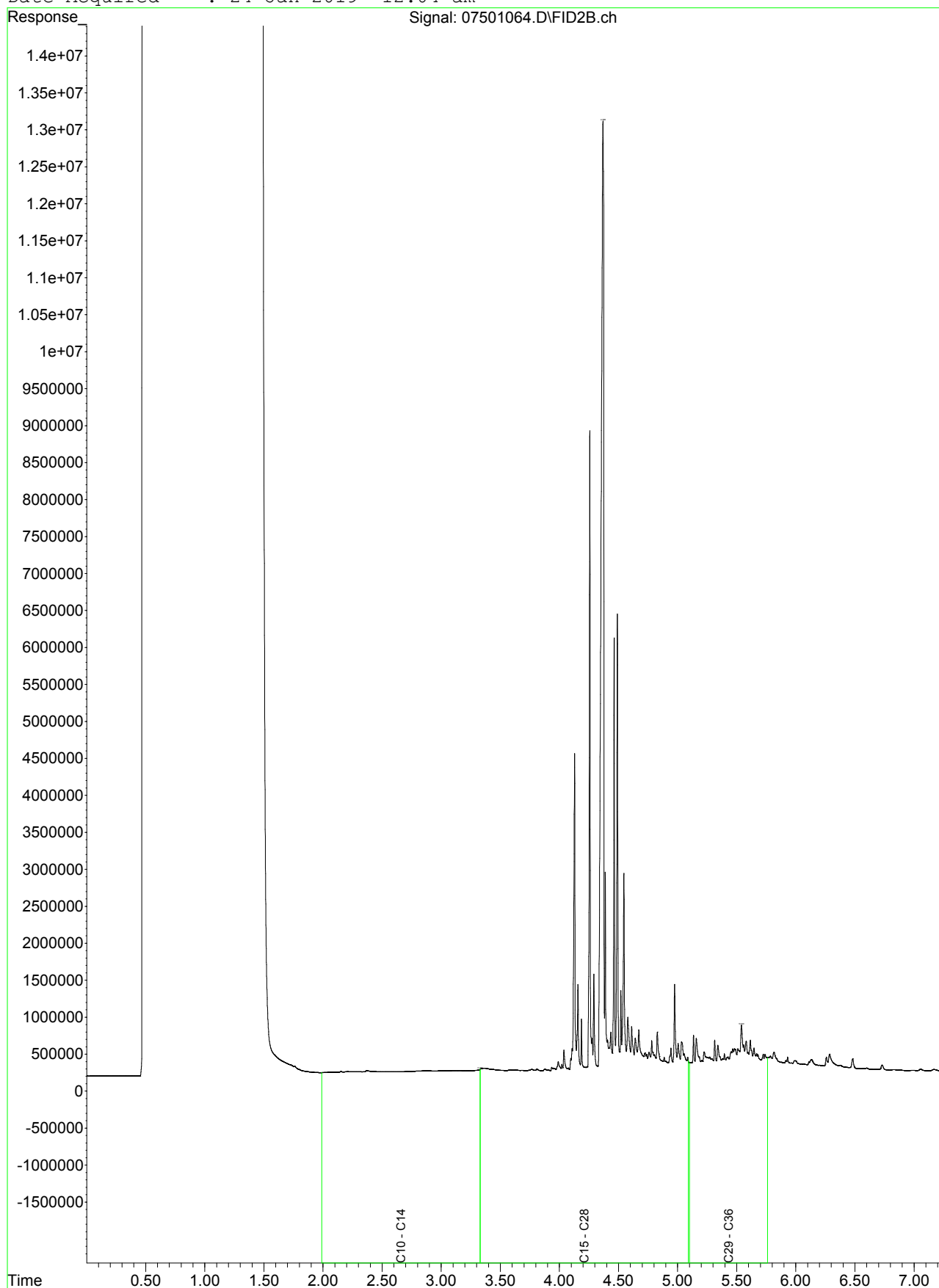
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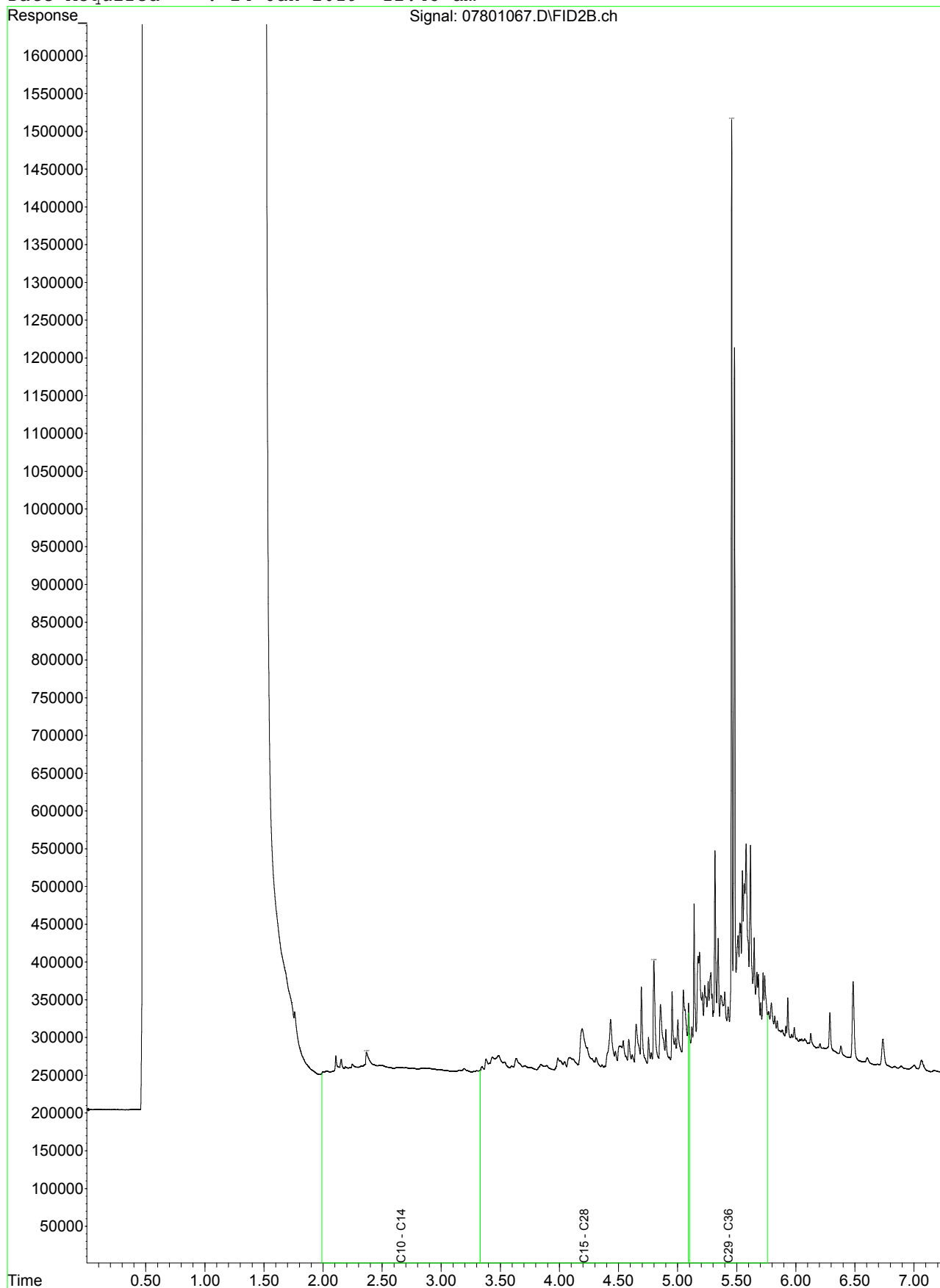
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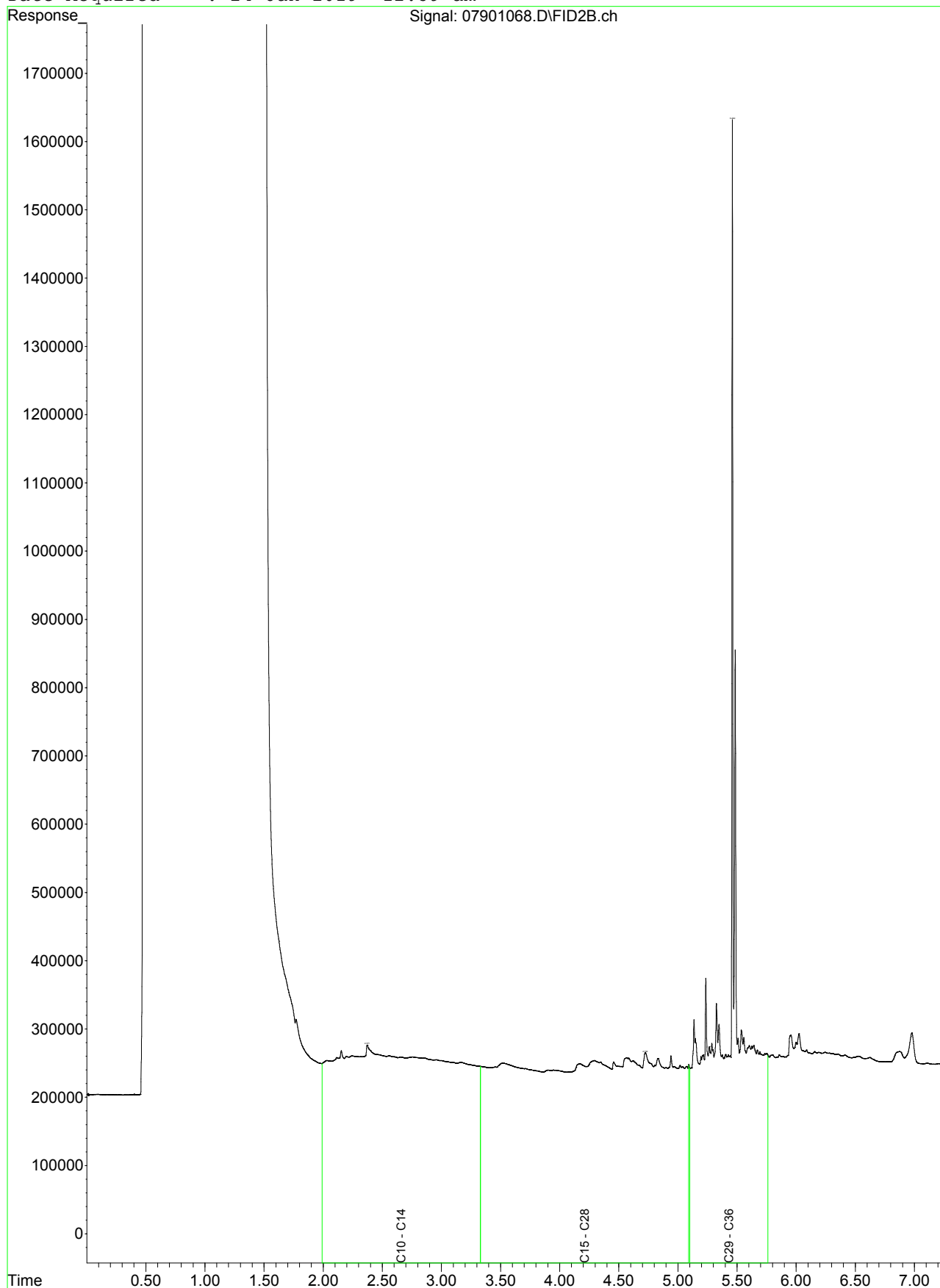
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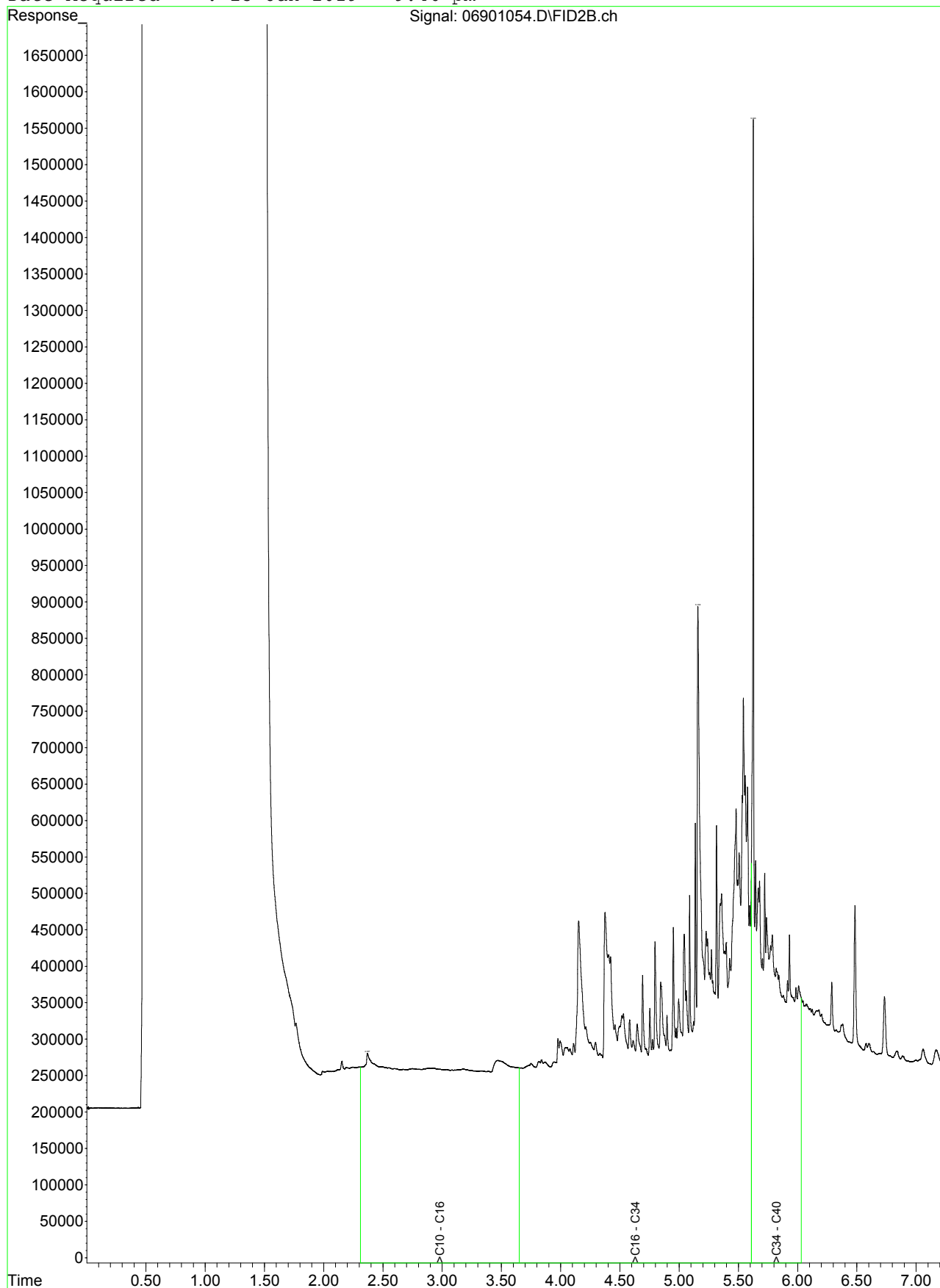
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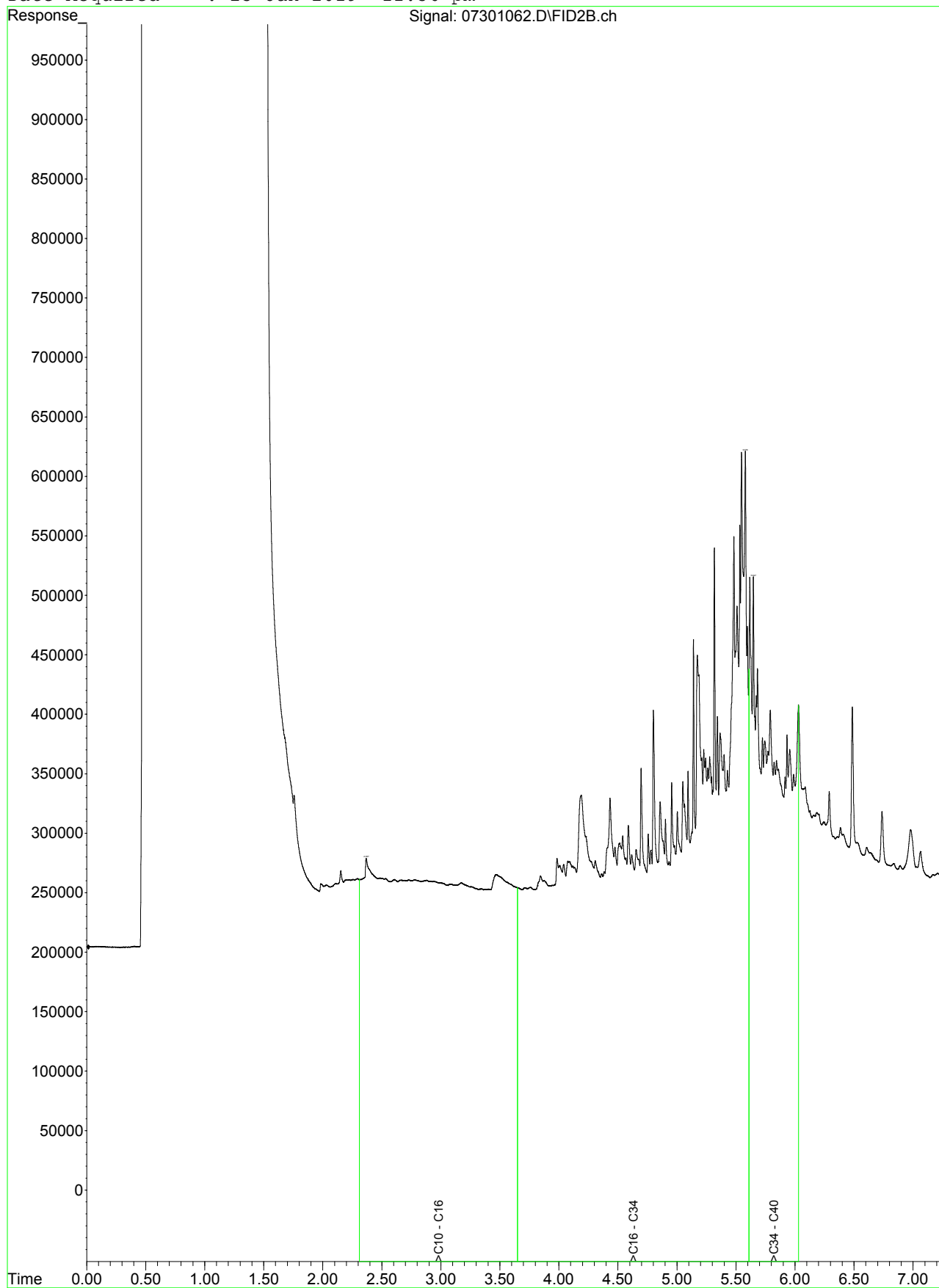
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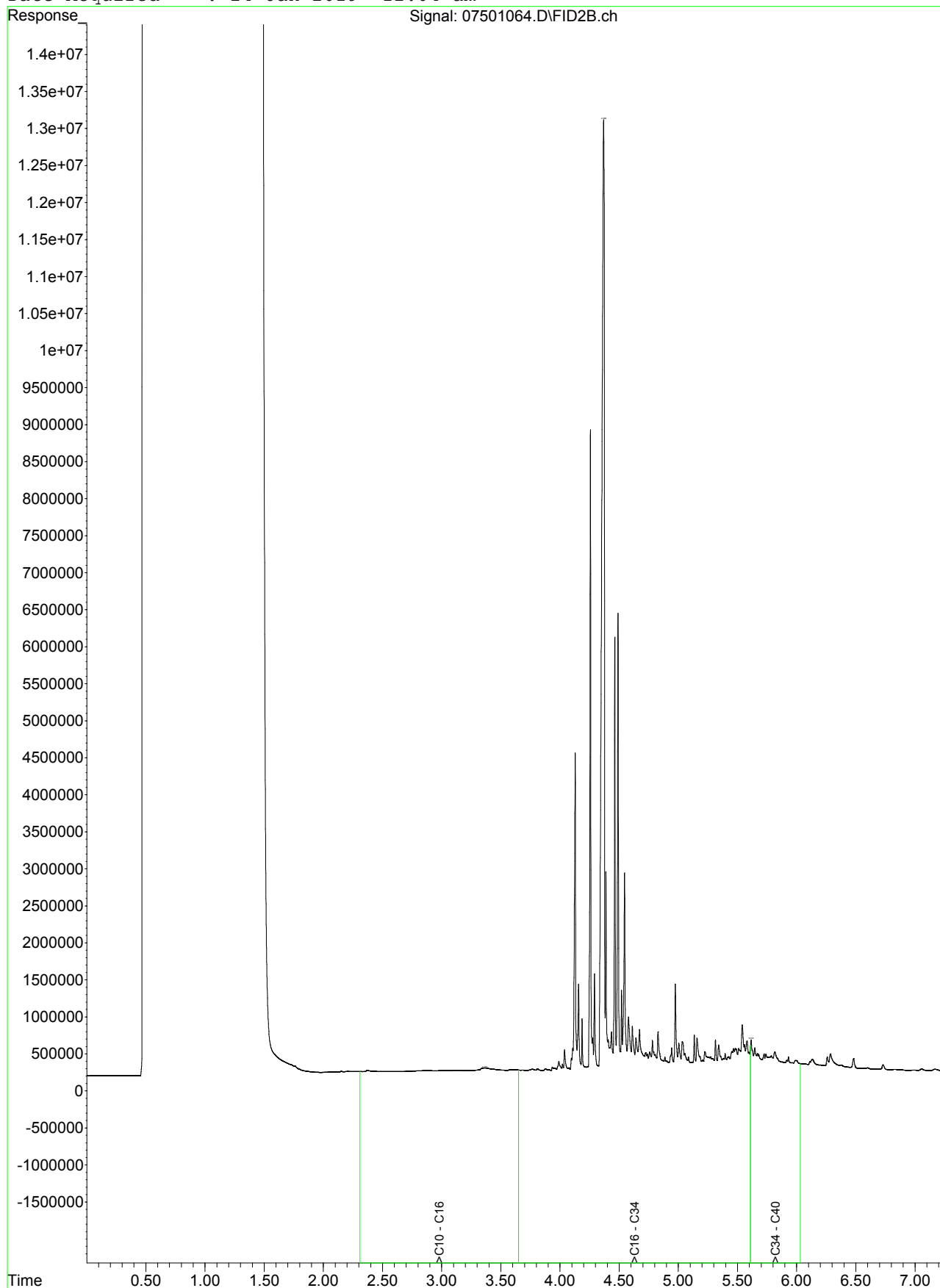
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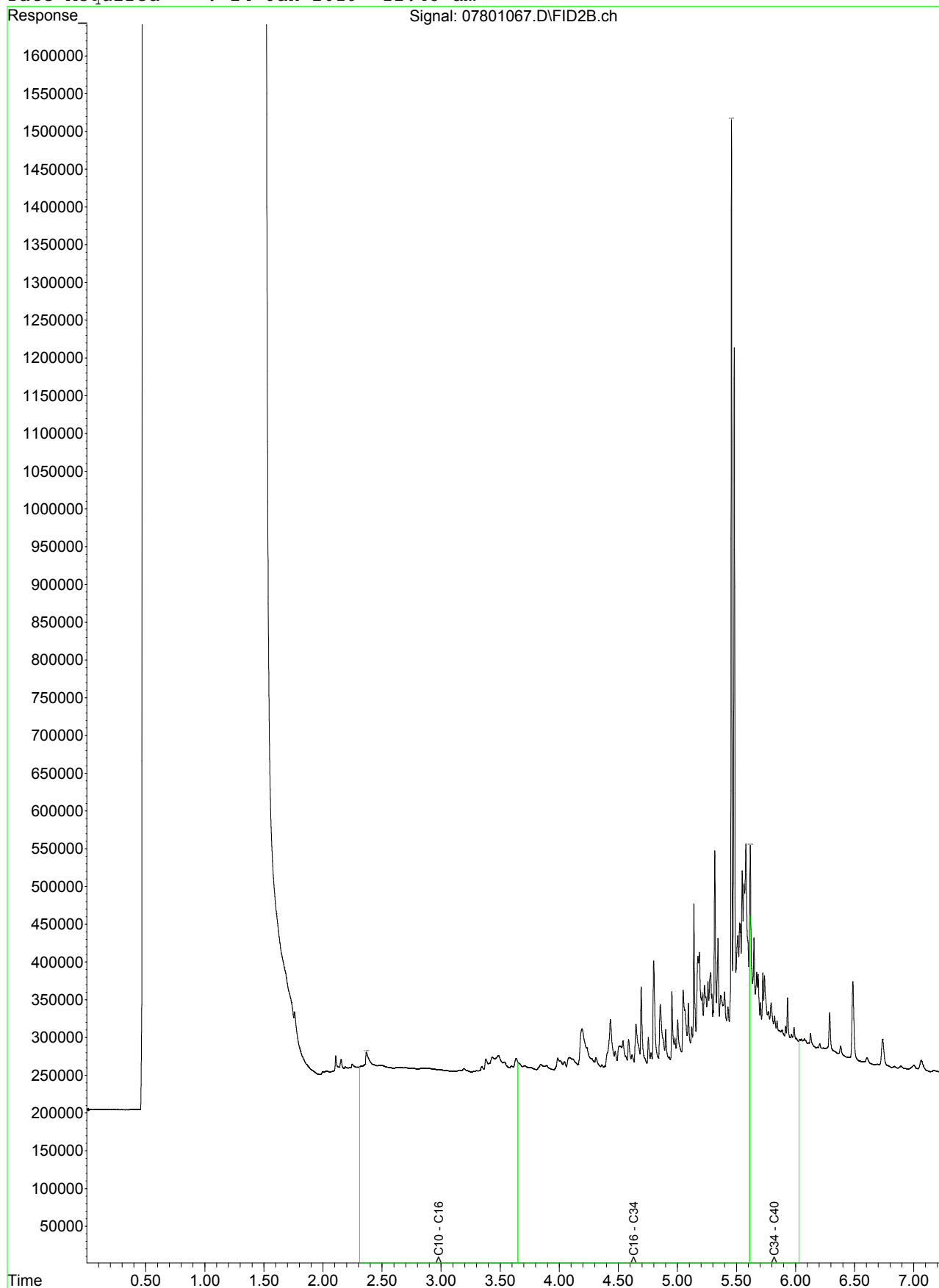
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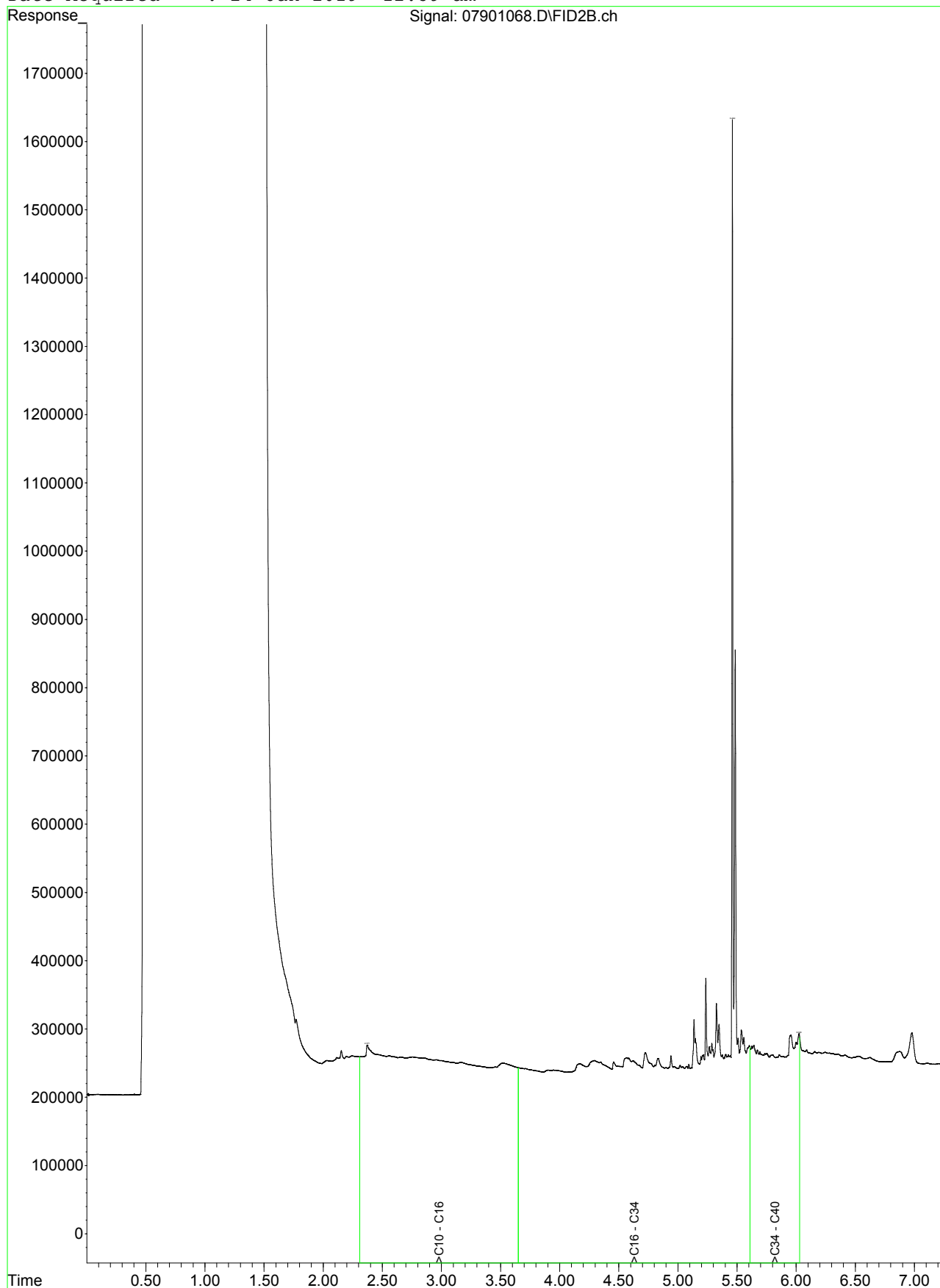
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Fraction Scheme : NEPM Fractions
Data File : 07801067.D
Laboratory Number: EM1900681-024
Sample ID : CPT126_BH47_0.0
Date Acquired : 24 Jan 2019 12:45 am



Fraction Scheme : NEPM Fractions
Data File : 07901068.D
Laboratory Number: EM1900681-025
Sample ID : CPT126_BH47_0.5
Date Acquired : 24 Jan 2019 12:59 am



ANZ
FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|------------------------|--|------|--|-------------|--|--------------------|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: J. McCulloch | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: GUFP Groundwater Study | | MOBILE: | | AUS | |
| PROJECT NUMBER & TASK CODE: 6092034 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: EM096119 | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | Notes: e.g. Highly contaminated sample
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | |
| COOLER SEAL (circle appropriate) | | | | | | | |
| Impact: Yes No | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes No | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W=Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | CP1073-BH27-170119-0.2 | S | 0820 | 0820 | | 1515 | |
| 2 | CP1073-BH27-170119-0.5 | | 0825 | 0825 | | | Y please freeze |
| 3 | CP1073-BH27-170119-1.0 | | 0830 | 0830 | | | Y samples for acid |
| 4 | CP1073-BH27-170119-1.5 | | 0835 | 0835 | | | Y Sulfate analysis |
| 5 | CP1073-BH27-170119-2.0 | | 0840 | 0840 | | | Y |
| 6 | CP1073-BH27-170119-2.5 | | 0845 | 0845 | | | Y |
| 7 | CP1067-BH24-170119-0.2 | | 0850 | 0850 | | | Y |
| 8 | CP1067-BH24-170119-0.5 | | 0855 | 0855 | | | Y |
| 9 | CP1067-BH24-170119-1.0 | | 0900 | 0900 | | | Y |
| 10 | CP1067-BH24-170119-1.5 | | 0905 | 0905 | | | Y |
| 11 | CP1067-BH24-170119-2.0 | | 0910 | 0910 | | | Y |
| 12 | CP1067-BH24-170119-2.5 | | 0915 | 0915 | | | Y |
| 13 | CP1064-BH38-170119-0.2 | | 0920 | 0920 | | | Y |
| 14 | CP1064-BH38-170119-0.5 | | 0925 | 0925 | | | Y |
| 15 | CP1064-BH38-170119-1.0 | | 0930 | 0930 | | | Y |
| 16 | CP1064-BH38-170119-1.5 | | 0935 | 0935 | | | Y |
| 17 | CP1064-BH38-170119-2.0 | | 0940 | 0940 | | | Y |
| 18 | CP1064-BH38-170119-2.5 | | 0945 | 0945 | | | Y |
| 19 | CP1023-BH46-170119-0.2 | | 0950 | 0950 | | | Y |

Forwarded to
Secondary Lab
Initials SK Date 19/1.

| | | | |
|------------------------|-----------------------|--------------------|----------------------|
| RELINQUISHED BY: | | RECEIVED BY: | |
| Name: S. Anglin | Date: 17.01.19 | Name: Alice | Date: 17/1/19 |
| Of: AECOM | Time: 1630 | Of: ALS | Time: 1715 |

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.

Environmental Division
Melbourne
Work Order Reference
EM1900682



Telephone : + 61-3-8549 9800

COC Page of

Please freeze bags for Acid sulfate analysis.

FQM - Generic Chain of Custody Form

[illegible]

COC Page of

Please freeze bags for Acid sulfate analysis

From: [REDACTED]@aecom.com>
Sent: Friday, 18 January 2019 2:39 PM
To: [REDACTED]
Subject: RE: 60592634

Hi [REDACTED]

Please analyse:

1. CPT067_BH24_170119_0.2 = IWRG621 7
2. CPT067_BH24_170119_0.5 = IWRG621 8
3. CPT073_BH27_170119_0.2 = IWRG621 1
4. CPT073_BH27_170119_0.5 = IWRG621 2
5. CPT104_BH38_170119_0.2 = IWRG621 13
6. CPT104_BH38_170119_0.5 = IWRG621 14
7. CPT123_BH46_170119_0.2 = IWRG621 19
8. CPT123_BH46_170119_0.5 = IWRG621 20
9. CPT067_BH24_170119_0.5 = SPOCAS (EA029) 8
10. CPT067_BH24_170119_2.0 = SPOCAS (EA029) 11
11. CPT073_BH27_170119_0.5 = Chromium Suite (EA033) 2
12. CPT073_BH27_170119_1.5 = Chromium Suite (EA033) 4
13. CPT104_BH38_170119_0.5 = Chromium Suite (EA033) 14
14. CPT104_BH38_170119_1.5 = Chromium Suite (EA033) 16
15. CPT123_BH46_170119_0.5 = Chromium Suite (EA033) 20
16. CPT123_BH46_170119_1.5 = Chromium Suite (EA033) 22
17. QC104_170119 = IWRG621 25
18. QC204_170119 = IWRG621(Triplicate, please forward to Eurofins) →
19. QC314_170119 = IWRG621 water equivalent 26
20. QC414_170119 = TPH(C6-C9)/BTEXN 27
21. QC525_170119 = TPH(C6-C9)/BTEXN ~~28~~ 29
22. QC526_170119 = TPH(C6-C9)/BTEXN ~~29~~ 30
23. QC527_170119 = TPH(C6-C9)/BTEXN 28

At Standard TAT. Thanks!

Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
<http://www.aecom.com>

Built to deliver a better world

-----Original Message-----

From: [REDACTED]@alsglobal.com]
Sent: Friday, 18 January 2019 7:05 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: 60592634

Hi [REDACTED]

Please find attached samples on hold

Thanks

Regards

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900682

| | |
|--|---|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : GIJPP Groundwater Study</p> <p>Sampler : [REDACTED]</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 4</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|--|---|

Dates

| | |
|---|--|
| <p>Date Samples Received : 17-Jan-2019 17:15</p> <p>Client Requested Due : 25-Jan-2019</p> <p>Date : </p> | <p>Issue Date : 19-Jan-2019</p> <p>Scheduled Reporting Date : 25-Jan-2019</p> |
|---|--|

Delivery Details

| | |
|---|--|
| <p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 3</p> <p>Receipt Detail :</p> | <p>Security Seal : Intact.</p> <p>Temperature : -3.0°C - Ice present</p> <p>No. of samples received / analysed : 30 / 18</p> |
|---|--|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM1900682-001 : 17-Jan-2019 08:20 : CPT073_BH27_170119_0.2
EM1900682-002 : 17-Jan-2019 08:25 : CPT073_BH27_170119_0.5
EM1900682-004 : 17-Jan-2019 08:35 : CPT073_BH27_170119_1.5
EM1900682-007 : 17-Jan-2019 09:45 : CPT067_BH24_170119_0.2
EM1900682-008 : 17-Jan-2019 09:45 : CPT067_BH24_170119_0.5
EM1900682-011 : 17-Jan-2019 10:05 : CPT067_BH24_170119_2.0
EM1900682-013 : 17-Jan-2019 11:10 : CPT104_BH38_170119_0.2
EM1900682-014 : 17-Jan-2019 11:15 : CPT104_BH38_170119_0.5
EM1900682-016 : 17-Jan-2019 11:25 : CPT104_BH38_170119_1.5
EM1900682-019 : 17-Jan-2019 13:40 : CPT123_BH46_170119_0.2
EM1900682-020 : 17-Jan-2019 13:45 : CPT123_BH46_170119_0.5
EM1900682-022 : 17-Jan-2019 13:55 : CPT123_BH46_170119_1.5

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: SOIL

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
|----------------------|-----------------------------|-------------------------|---|------------------------|--|--------------------------------------|-------------------------|
| EM1900682-001 | 17-Jan-2019 08:20 | CPT073_BH27_170119_0... | | | | ✓ | ✓ |
| EM1900682-002 | 17-Jan-2019 08:25 | CPT073_BH27_170119_0... | | | ✓ | ✓ | ✓ |
| EM1900682-003 | 17-Jan-2019 08:30 | CPT073_BH27_170119_1... | ✓ | | | | |
| EM1900682-004 | 17-Jan-2019 08:35 | CPT073_BH27_170119_1... | | | ✓ | | |
| EM1900682-005 | 17-Jan-2019 08:40 | CPT073_BH27_170119_2... | ✓ | | | | |
| EM1900682-006 | 17-Jan-2019 08:45 | CPT073_BH27_170119_2... | ✓ | | | | |
| EM1900682-007 | 17-Jan-2019 09:45 | CPT067_BH24_170119_0... | | | | ✓ | ✓ |
| EM1900682-008 | 17-Jan-2019 09:45 | CPT067_BH24_170119_0... | | ✓ | | ✓ | ✓ |
| EM1900682-009 | 17-Jan-2019 09:55 | CPT067_BH24_170119_1... | ✓ | | | | |
| EM1900682-010 | 17-Jan-2019 10:00 | CPT067_BH24_170119_1... | ✓ | | | | |
| EM1900682-011 | 17-Jan-2019 10:05 | CPT067_BH24_170119_2... | | ✓ | | | |
| EM1900682-012 | 17-Jan-2019 10:10 | CPT067_BH24_170119_2... | ✓ | | | | |
| EM1900682-013 | 17-Jan-2019 11:10 | CPT104_BH38_170119_0... | | | | ✓ | ✓ |
| EM1900682-014 | 17-Jan-2019 11:15 | CPT104_BH38_170119_0... | | | ✓ | ✓ | ✓ |
| EM1900682-015 | 17-Jan-2019 11:20 | CPT104_BH38_170119_1... | ✓ | | | | |
| EM1900682-016 | 17-Jan-2019 11:25 | CPT104_BH38_170119_1... | | | ✓ | | |
| EM1900682-017 | 17-Jan-2019 11:30 | CPT104_BH38_170119_2... | ✓ | | | | |
| EM1900682-018 | 17-Jan-2019 11:35 | CPT104_BH38_170119_2... | ✓ | | | | |
| EM1900682-019 | 17-Jan-2019 13:40 | CPT123_BH46_170119_0... | | | | ✓ | ✓ |
| EM1900682-020 | 17-Jan-2019 13:45 | CPT123_BH46_170119_0... | | | ✓ | ✓ | ✓ |
| EM1900682-021 | 17-Jan-2019 13:50 | CPT123_BH46_170119_1... | ✓ | | | | |
| EM1900682-022 | 17-Jan-2019 13:55 | CPT123_BH46_170119_1... | | | ✓ | | |
| EM1900682-023 | 17-Jan-2019 14:00 | CPT123_BH46_170119_2... | ✓ | | | | |
| EM1900682-024 | 17-Jan-2019 14:05 | CPT123_BH46_170119_2... | ✓ | | | | |



| | | | | | | | |
|---------------|-------------------|------------------|---|------------------------|--|--------------------------------------|-------------------------|
| | | | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
| EM1900682-025 | 17-Jan-2019 00:00 | CPT_QC104_170119 | | | | ✓ | ✓ |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------------------|
| EM1900682-026 | 17-Jan-2019 00:00 | CPT_QC314_170119 | ✓ | |
| EM1900682-027 | 17-Jan-2019 00:00 | CPT_QC414_170119 | | ✓ |
| EM1900682-028 | 17-Jan-2019 00:00 | CPT_QC524_170119 | | ✓ |
| EM1900682-029 | 17-Jan-2019 00:00 | CPT_QC525_170119 | | ✓ |
| EM1900682-030 | 17-Jan-2019 00:00 | CPT_QC526_170119 | | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

| Method | Container | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|----------------------------|--------------------------------|--------------------|------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| CPT_QC314_170119 | Clear Plastic Bottle - Natural | ---- | 17-Jan-2019 | 17-Jan-2019 | ✓ | 18-Jan-2019 | ✗ |



Requested Deliverables

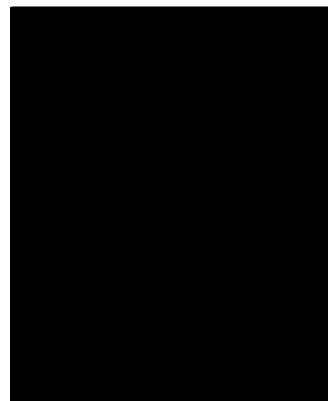
ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

Email
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CERTIFICATE OF ANALYSIS

Work Order : **EM1900682**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number : ----
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 30
No. of samples analysed : 18

Page : 1 of 29
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 17-Jan-2019 17:15
Date Analysis Commenced : 21-Jan-2019
Issue Date : 29-Jan-2019 15:36



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|-------------------------------------|---|
| [REDACTED] | Non-metals prep supervisor | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- EG048G: EM1900681 #1, Poor matrix spike recovery for hexavalent chromium due to matrix effects.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m³ in-situ soil, multiply reported results x wet bulk density of soil in t/m³.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



□ □ □ □ □ □ □ □ □ □ □ □

| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT073_BH27_17011
9_0.2 | CPT073_BH27_17011
9_0.5 | CPT073_BH27_17011
9_1.5 | CPT067_BH24_17011
9_0.2 | CPT067_BH24_17011
9_0.5 |
|---|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 17-Jan-2019 08:20 | 17-Jan-2019 08:25 | 17-Jan-2019 08:35 | 17-Jan-2019 09:45 | 17-Jan-2019 09:45 |
| Compound | CAS Number | LOR | Unit | | EM1900682-001 | EM1900682-002 | EM1900682-004 | EM1900682-007 | EM1900682-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 5.2 | 5.7 | ---- | 5.3 | 5.7 |
| EA029-A: pH Measurements | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | ---- | ---- | ---- | 6.0 |
| pH OX (23B) | ---- | 0.1 | pH Unit | | ---- | ---- | ---- | ---- | 4.4 |
| EA029-B: Acidity Trail | | | | | | | | | |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | ---- | ---- | ---- | <2 |
| Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | | ---- | ---- | ---- | ---- | 4 |
| Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | | ---- | ---- | ---- | ---- | 4 |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.020 | % pyrite S | | ---- | ---- | ---- | ---- | <0.020 |
| sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.020 | % pyrite S | | ---- | ---- | ---- | ---- | <0.020 |
| sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.020 | % pyrite S | | ---- | ---- | ---- | ---- | <0.020 |
| EA029-C: Sulfur Trail | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.020 | % S | | ---- | ---- | ---- | ---- | <0.020 |
| Peroxide Sulfur (23De) | ---- | 0.020 | % S | | ---- | ---- | ---- | ---- | <0.020 |
| Peroxide Oxidisable Sulfur (23E) | ---- | 0.020 | % S | | ---- | ---- | ---- | ---- | <0.020 |
| acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | | ---- | ---- | ---- | ---- | <10 |
| EA029-D: Calcium Values | | | | | | | | | |
| KCl Extractable Calcium (23Vh) | ---- | 0.020 | % Ca | | ---- | ---- | ---- | ---- | 0.037 |
| Peroxide Calcium (23Wh) | ---- | 0.020 | % Ca | | ---- | ---- | ---- | ---- | 0.036 |
| Acid Reacted Calcium (23X) | ---- | 0.020 | % Ca | | ---- | ---- | ---- | ---- | <0.020 |
| acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | | ---- | ---- | ---- | ---- | <10 |
| sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.020 | % S | | ---- | ---- | ---- | ---- | <0.020 |
| EA029-E: Magnesium Values | | | | | | | | | |
| KCl Extractable Magnesium (23Sm) | ---- | 0.020 | % Mg | | ---- | ---- | ---- | ---- | <0.020 |
| Peroxide Magnesium (23Tm) | ---- | 0.020 | % Mg | | ---- | ---- | ---- | ---- | <0.020 |
| Acid Reacted Magnesium (23U) | ---- | 0.020 | % Mg | | ---- | ---- | ---- | ---- | <0.020 |
| Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | | ---- | ---- | ---- | ---- | <10 |
| sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.020 | % S | | ---- | ---- | ---- | ---- | <0.020 |
| EA029-H: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | ---- | ---- | ---- | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | ---- | ---- | ---- | <0.02 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT073_BH27_17011
9_0.2 | CPT073_BH27_17011
9_0.5 | CPT073_BH27_17011
9_1.5 | CPT067_BH24_17011
9_0.2 | CPT067_BH24_17011
9_0.5 |
|--|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 17-Jan-2019 08:20 | 17-Jan-2019 08:25 | 17-Jan-2019 08:35 | 17-Jan-2019 09:45 | 17-Jan-2019 09:45 |
| Compound | CAS Number | LOR | Unit | | EM1900682-001 | EM1900682-002 | EM1900682-004 | EM1900682-007 | EM1900682-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA029-H: Acid Base Accounting - Continued | | | | | | | | | |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | ---- | ---- | ---- | ---- | <10 |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | ---- | ---- | ---- | ---- | <1 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | ---- | ---- | ---- | ---- | <0.02 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | ---- | ---- | ---- | ---- | <10 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | ---- | ---- | ---- | ---- | <1 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | ---- | 5.4 | 5.2 | ---- | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | ---- | 10 | 12 | ---- | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | ---- | <0.02 | <0.02 | ---- | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | ---- | 0.006 | <0.005 | ---- | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | ---- | <10 | <10 | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | ---- | 1.5 | 1.5 | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | ---- | 0.02 | <0.02 | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | 13 | 12 | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | <1 | <1 | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | 0.02 | <0.02 | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | 13 | 12 | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | <1 | <1 | ---- | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 19.5 | 22.6 | ---- | 9.3 | 9.1 | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 6 | ---- | <5 | <5 | |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 | |
| Copper | 7440-50-8 | 5 | mg/kg | 10 | 6 | ---- | <5 | <5 | |
| Lead | 7439-92-1 | 5 | mg/kg | 13 | 13 | ---- | <5 | <5 | |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | ---- | <2 | <2 | |
| Nickel | 7440-02-0 | 2 | mg/kg | 10 | 10 | ---- | <2 | <2 | |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | ---- | <5 | <5 | |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | ---- | <2 | <2 | |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | ---- | <5 | <5 | |
| Zinc | 7440-66-6 | 5 | mg/kg | 8 | 7 | ---- | <5 | <5 | |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT073_BH27_17011
9_0.2 | CPT073_BH27_17011
9_0.5 | CPT073_BH27_17011
9_1.5 | CPT067_BH24_17011
9_0.2 | CPT067_BH24_17011
9_0.5 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 17-Jan-2019 08:20 | 17-Jan-2019 08:25 | 17-Jan-2019 08:35 | 17-Jan-2019 09:45 | 17-Jan-2019 09:45 |
| Compound | CAS Number | LOR | Unit | | EM1900682-001 | EM1900682-002 | EM1900682-004 | EM1900682-007 | EM1900682-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | ---- | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | 1 | <1 | ---- | <1 | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | 260 | 230 | ---- | 40 | 40 | 40 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | ---- | <0.1 | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | ---- | <0.2 | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | <0.2 | <0.2 | ---- | <0.2 | <0.2 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | <0.5 | <0.5 | ---- | <0.5 | <0.5 | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | ---- | <0.4 | <0.4 | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | <0.01 | <0.01 | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | ---- | <0.04 | <0.04 | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 | <0.02 |

| <i>Client sampling date / time</i> | | | | <i>17-Jan-2019 08:20</i> | <i>17-Jan-2019 08:25</i> | <i>17-Jan-2019 08:35</i> | <i>17-Jan-2019 09:45</i> | <i>17-Jan-2019 09:45</i> |
|------------------------------------|-------------------|------------|-------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <i>Compound</i> | <i>CAS Number</i> | <i>LOR</i> | <i>Unit</i> | EM1900682-001 | EM1900682-002 | EM1900682-004 | EM1900682-007 | EM1900682-008 |
| | | | | Result | Result | Result | Result | Result |

| | | | | | | | | |
|---|----------|------|-------|-------|-------|------|-------|-------|
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| [^] Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| [^] Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | <0.01 | ---- | <0.01 | <0.01 |

| | | | | | | | | |
|---|-------------------|------|-------|-------|-------|------|-------|-------|
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | ---- | <0.2 | <0.2 |
| ^a Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 |

| | | | | | | | | |
|------------------------------------|-----------|---|-------|----|----|------|----|----|
| Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | ---- | <5 | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | ---- | <5 | <5 |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | ---- | <5 | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | ---- | <5 | <5 |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | ---- | <5 | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | <1 | <1 | ---- | <1 | <1 |

EP075B: Polynuclear Aromatic Hydrocarbons



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT073_BH27_17011
9_0.2 | CPT073_BH27_17011
9_0.5 | CPT073_BH27_17011
9_1.5 | CPT067_BH24_17011
9_0.2 | CPT067_BH24_17011
9_0.5 |
|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 17-Jan-2019 08:20 | 17-Jan-2019 08:25 | 17-Jan-2019 08:35 | 17-Jan-2019 09:45 | 17-Jan-2019 09:45 |
| Compound | CAS Number | LOR | Unit | | EM1900682-001 | EM1900682-002 | EM1900682-004 | EM1900682-007 | EM1900682-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | 0.6 | ---- | 0.6 | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | 1.2 | ---- | 1.2 | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT073_BH27_17011
9_0.2 | CPT073_BH27_17011
9_0.5 | CPT073_BH27_17011
9_1.5 | CPT067_BH24_17011
9_0.2 | CPT067_BH24_17011
9_0.5 |
|--|--------------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 17-Jan-2019 08:20 | 17-Jan-2019 08:25 | 17-Jan-2019 08:35 | 17-Jan-2019 09:45 | 17-Jan-2019 09:45 |
| Compound | CAS Number | LOR | Unit | | EM1900682-001 | EM1900682-002 | EM1900682-004 | EM1900682-007 | EM1900682-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | <0.05 | <0.05 | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | <0.03 | ---- | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | ---- | <10 | <10 | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | ---- | <50 | <50 | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | ---- | <10 | <10 | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | ---- | <100 | <100 | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | 160 | <100 | ---- | <100 | <100 | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | 160 | <50 | ---- | <50 | <50 | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | ---- | <50 | <50 | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | 220 | <100 | ---- | <100 | <100 | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | ---- | <100 | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | 220 | <50 | ---- | <50 | <50 | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | <50 | ---- | <50 | <50 | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | ---- | <10 | <10 | <10 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 98.4 | 102 | ---- | 107 | 109 | |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 81.3 | 83.6 | ---- | 84.6 | 86.3 | |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 87.1 | 83.0 | ---- | 84.1 | 88.6 | |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT073_BH27_17011
9_0.2 | CPT073_BH27_17011
9_0.5 | CPT073_BH27_17011
9_1.5 | CPT067_BH24_17011
9_0.2 | CPT067_BH24_17011
9_0.5 |
|---|------------|-------|------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | 17-Jan-2019 08:20 | 17-Jan-2019 08:25 | 17-Jan-2019 08:35 | 17-Jan-2019 09:45 | 17-Jan-2019 09:45 |
| Compound | CAS Number | LOR | Unit | EM1900682-001 | EM1900682-002 | EM1900682-004 | EM1900682-007 | EM1900682-008 |
| | | | | Result | Result | Result | Result | Result |
| EP074S: VOC Surrogates (Ultra-Trace) - Continued | | | | | | | | |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 94.6 | 87.1 | ---- | 89.6 | 90.2 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 55.9 | 63.9 | ---- | 69.3 | 64.2 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 41.4 | 46.8 | ---- | 50.4 | 48.4 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 72.3 | 73.9 | ---- | 93.3 | 79.7 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 49.0 | 58.6 | ---- | 61.4 | 59.7 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 33.2 | 41.1 | ---- | 48.5 | 49.5 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 51.8 | 58.2 | ---- | 67.9 | 63.5 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 70.2 | 78.1 | ---- | 94.2 | 87.9 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 88.4 | 105 | ---- | 114 | 113 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT067_BH24_17011
9_2.0 | CPT104_BH38_17011
9_0.2 | CPT104_BH38_17011
9_0.5 | CPT104_BH38_17011
9_1.5 | CPT123_BH46_17011
9_0.2 |
|---|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 17-Jan-2019 10:05 | 17-Jan-2019 11:10 | 17-Jan-2019 11:15 | 17-Jan-2019 11:25 | 17-Jan-2019 13:40 |
| Compound | CAS Number | LOR | Unit | | EM1900682-011 | EM1900682-013 | EM1900682-014 | EM1900682-016 | EM1900682-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | ---- | 4.5 | 4.6 | ---- | ---- | 4.7 |
| EA029-A: pH Measurements | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.2 | ---- | ---- | ---- | ---- | ---- |
| pH OX (23B) | ---- | 0.1 | pH Unit | 5.7 | ---- | ---- | ---- | ---- | ---- |
| EA029-B: Acidity Trail | | | | | | | | | |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 12 | ---- | ---- | ---- | ---- | ---- |
| Titrateable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | 21 | ---- | ---- | ---- | ---- | ---- |
| Titrateable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | 9 | ---- | ---- | ---- | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.020 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- | ---- |
| sulfidic - Titrateable Peroxide Acidity (s-23G) | ---- | 0.020 | % pyrite S | 0.033 | ---- | ---- | ---- | ---- | ---- |
| sulfidic - Titrateable Sulfidic Acidity (s-23H) | ---- | 0.020 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- | ---- |
| EA029-C: Sulfur Trail | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.020 | % S | 0.025 | ---- | ---- | ---- | ---- | ---- |
| Peroxide Sulfur (23De) | ---- | 0.020 | % S | 0.030 | ---- | ---- | ---- | ---- | ---- |
| Peroxide Oxidisable Sulfur (23E) | ---- | 0.020 | % S | <0.020 | ---- | ---- | ---- | ---- | ---- |
| acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- | ---- |
| EA029-D: Calcium Values | | | | | | | | | |
| KCl Extractable Calcium (23Vh) | ---- | 0.020 | % Ca | 0.062 | ---- | ---- | ---- | ---- | ---- |
| Peroxide Calcium (23Wh) | ---- | 0.020 | % Ca | 0.068 | ---- | ---- | ---- | ---- | ---- |
| Acid Reacted Calcium (23X) | ---- | 0.020 | % Ca | <0.020 | ---- | ---- | ---- | ---- | ---- |
| acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- | ---- |
| sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.020 | % S | <0.020 | ---- | ---- | ---- | ---- | ---- |
| EA029-E: Magnesium Values | | | | | | | | | |
| KCl Extractable Magnesium (23Sm) | ---- | 0.020 | % Mg | 0.088 | ---- | ---- | ---- | ---- | ---- |
| Peroxide Magnesium (23Tm) | ---- | 0.020 | % Mg | 0.089 | ---- | ---- | ---- | ---- | ---- |
| Acid Reacted Magnesium (23U) | ---- | 0.020 | % Mg | <0.020 | ---- | ---- | ---- | ---- | ---- |
| Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- | ---- |
| sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.020 | % S | <0.020 | ---- | ---- | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | ---- | ---- | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.02 | ---- | ---- | ---- | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT067_BH24_17011
9_2.0 | CPT104_BH38_17011
9_0.2 | CPT104_BH38_17011
9_0.5 | CPT104_BH38_17011
9_1.5 | CPT123_BH46_17011
9_0.2 |
|--|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 17-Jan-2019 10:05 | 17-Jan-2019 11:10 | 17-Jan-2019 11:15 | 17-Jan-2019 11:25 | 17-Jan-2019 13:40 |
| Compound | CAS Number | LOR | Unit | | EM1900682-011 | EM1900682-013 | EM1900682-014 | EM1900682-016 | EM1900682-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA029-H: Acid Base Accounting - Continued | | | | | | | | | |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 15 | ---- | ---- | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | 1 | ---- | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.02 | ---- | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 15 | ---- | ---- | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 1 | ---- | ---- | ---- | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | ---- | ---- | 4.5 | 4.6 | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | ---- | ---- | 47 | 29 | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | ---- | ---- | 0.08 | 0.05 | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | ---- | ---- | 0.009 | 0.006 | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | ---- | ---- | <10 | <10 | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | ---- | ---- | 1.5 | 1.5 | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | ---- | ---- | 0.08 | 0.05 | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | ---- | 53 | 33 | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | ---- | 4 | 2 | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | ---- | 0.08 | 0.05 | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | ---- | 53 | 33 | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | ---- | 4 | 2 | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | ---- | 23.7 | 32.9 | ---- | 13.7 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | ---- | <5 | <5 | ---- | <5 | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | ---- | <1 | <1 | ---- | <1 | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | ---- | 25 | 30 | ---- | 10 | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | ---- | 18 | 19 | ---- | 14 | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | ---- | <2 | <2 | ---- | <2 | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | ---- | 15 | 16 | ---- | 8 | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | ---- | <5 | <5 | ---- | <5 | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | ---- | <2 | <2 | ---- | <2 | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | ---- | <5 | <5 | ---- | <5 | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | ---- | 10 | 8 | ---- | 8 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT067_BH24_17011
9_2.0 | CPT104_BH38_17011
9_0.2 | CPT104_BH38_17011
9_0.5 | CPT104_BH38_17011
9_1.5 | CPT123_BH46_17011
9_0.2 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 17-Jan-2019 10:05 | 17-Jan-2019 11:10 | 17-Jan-2019 11:15 | 17-Jan-2019 11:25 | 17-Jan-2019 13:40 |
| Compound | CAS Number | LOR | Unit | | EM1900682-011 | EM1900682-013 | EM1900682-014 | EM1900682-016 | EM1900682-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | ---- | <0.1 | <0.1 | <0.1 | ---- | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | ---- | 1 | 1 | 1 | ---- | 1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | ---- | 200 | 180 | ---- | ---- | 100 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | ---- | <0.1 | <0.1 | <0.1 | ---- | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | ---- | <0.4 | <0.4 | <0.4 | ---- | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | ---- | <0.04 | <0.04 | <0.04 | ---- | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |

| | | | | Client sampling date / time | 17-Jan-2019 10:05 | 17-Jan-2019 11:10 | 17-Jan-2019 11:15 | 17-Jan-2019 11:25 | 17-Jan-2019 13:40 |
|--|-------------------|------|-------|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Compound | CAS Number | LOR | Unit | | EM1900682-011 | EM1900682-013 | EM1900682-014 | EM1900682-016 | EM1900682-019 |
| | | | | Result | Result | Result | Result | Result | |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT067_BH24_17011
9_2.0 | CPT104_BH38_17011
9_0.2 | CPT104_BH38_17011
9_0.5 | CPT104_BH38_17011
9_1.5 | CPT123_BH46_17011
9_0.2 |
|--|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 17-Jan-2019 10:05 | 17-Jan-2019 11:10 | 17-Jan-2019 11:15 | 17-Jan-2019 11:25 | 17-Jan-2019 13:40 |
| Compound | CAS Number | LOR | Unit | | EM1900682-011 | EM1900682-013 | EM1900682-014 | EM1900682-016 | EM1900682-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | ---- | 0.6 | 0.6 | 0.6 | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | ---- | 1.2 | 1.2 | 1.2 | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | ---- | 0.30 | <0.05 | <0.05 | ---- | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT067_BH24_17011
9_2.0 | CPT104_BH38_17011
9_0.2 | CPT104_BH38_17011
9_0.5 | CPT104_BH38_17011
9_1.5 | CPT123_BH46_17011
9_0.2 |
|--|--------------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | | 17-Jan-2019 10:05 | 17-Jan-2019 11:10 | 17-Jan-2019 11:15 | 17-Jan-2019 11:25 | 17-Jan-2019 13:40 |
| Compound | CAS Number | LOR | Unit | | EM1900682-011 | EM1900682-013 | EM1900682-014 | EM1900682-016 | EM1900682-019 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | 0.30 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | ---- | 0.30 | <0.05 | <0.05 | ---- | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | ---- | <10 | <10 | <10 | ---- | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | ---- | <10 | <10 | <10 | ---- | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | ---- | 140 | 120 | 120 | ---- | 100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | ---- | 150 | 140 | 140 | ---- | 110 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | ---- | 290 | 260 | 260 | ---- | 210 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | ---- | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | ---- | 240 | 220 | 220 | ---- | 180 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | <100 | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | ---- | 240 | 220 | 220 | ---- | 180 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | ---- | <10 | <10 | <10 | ---- | <10 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | ---- | 114 | 111 | 111 | ---- | 104 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | ---- | 78.2 | 62.3 | 62.3 | ---- | 79.0 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | ---- | 87.5 | 74.3 | 74.3 | ---- | 85.0 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT067_BH24_17011
9_2.0 | CPT104_BH38_17011
9_0.2 | CPT104_BH38_17011
9_0.5 | CPT104_BH38_17011
9_1.5 | CPT123_BH46_17011
9_0.2 |
|---|------------|-------|------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Client sampling date / time | | | | 17-Jan-2019 10:05 | 17-Jan-2019 11:10 | 17-Jan-2019 11:15 | 17-Jan-2019 11:25 | 17-Jan-2019 13:40 |
| Compound | CAS Number | LOR | Unit | EM1900682-011 | EM1900682-013 | EM1900682-014 | EM1900682-016 | EM1900682-019 |
| | | | | Result | Result | Result | Result | Result |
| EP074S: VOC Surrogates (Ultra-Trace) - Continued | | | | | | | | |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | ---- | 88.2 | 78.4 | ---- | 83.8 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | ---- | 87.3 | 79.9 | ---- | 77.1 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | ---- | 61.7 | 58.2 | ---- | 54.9 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | ---- | 120 | 108 | ---- | 106 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | ---- | 78.2 | 72.7 | ---- | 67.0 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | ---- | 53.5 | 44.9 | ---- | 48.1 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | ---- | 87.9 | 77.2 | ---- | 80.6 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | ---- | 109 | 100 | ---- | 97.7 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | ---- | 131 | 119 | ---- | 116 |



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|---|------------|-------|-------------|------------------|----------------------------|----------------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT123_BH46_17011
9_0.5 | CPT123_BH46_17011
9_1.5 | CPT_QC104_170119 | ---- | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 13:45 | 17-Jan-2019 13:55 | 17-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1900682-020 | EM1900682-022 | EM1900682-025 | | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | 5.0 | ---- | 4.9 | | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.0 | 4.5 | ---- | | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 18 | 30 | ---- | | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.03 | 0.05 | ---- | | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.005 | ---- | | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | ---- | | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | ---- | | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.03 | 0.05 | ---- | | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 18 | 33 | ---- | | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | 1 | 2 | ---- | | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.03 | 0.05 | ---- | | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 18 | 33 | ---- | | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 1 | 2 | ---- | | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 20.7 | ---- | 11.8 | | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | ---- | <5 | | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | ---- | <1 | | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | 6 | ---- | <5 | | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | 13 | ---- | <5 | | ---- | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | ---- | <2 | | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | 5 | ---- | 2 | | ---- | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | ---- | <5 | | ---- | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | ---- | <2 | | ---- | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | ---- | <5 | | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | <5 | ---- | 8 | | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | ---- | <0.1 | | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | | ---- | ---- |



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|--|-------------------|------|-------|------------------|----------------------------|----------------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT123_BH46_17011
9_0.5 | CPT123_BH46_17011
9_1.5 | CPT_QC104_170119 | ---- | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 13:45 | 17-Jan-2019 13:55 | 17-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900682-020 | EM1900682-022 | EM1900682-025 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | <1 | ---- | <1 | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 100 | ---- | 50 | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | <1 | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | <0.4 | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | ---- | <0.04 | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | ---- |



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|--|-------------------|------|-------|------------------|----------------------------|----------------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT123_BH46_17011
9_0.5 | CPT123_BH46_17011
9_1.5 | CPT_QC104_170119 | ---- | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 13:45 | 17-Jan-2019 13:55 | 17-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900682-020 | EM1900682-022 | EM1900682-025 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | ---- | <1 | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | ---- | <1 | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | ---- | <1 | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | ---- | <1 | ---- | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | ---- | <1 | ---- | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | ---- | <5 | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | ---- | <5 | ---- | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | ---- | <5 | ---- | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | ---- | <5 | ---- | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | ---- | <5 | ---- | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | ---- | <1 | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |



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|---|-------------------|------|-------|------------------|----------------------------|----------------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT123_BH46_17011
9_0.5 | CPT123_BH46_17011
9_1.5 | CPT_QC104_170119 | ---- | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 13:45 | 17-Jan-2019 13:55 | 17-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900682-020 | EM1900682-022 | EM1900682-025 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | ---- | 0.6 | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | ---- | 1.2 | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | ---- |



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|---|--------------------------|-------|-------|------------------|----------------------------|----------------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT123_BH46_17011
9_0.5 | CPT123_BH46_17011
9_1.5 | CPT_QC104_170119 | ---- | ---- |
| Client sampling date / time | | | | | 17-Jan-2019 13:45 | 17-Jan-2019 13:55 | 17-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900682-020 | EM1900682-022 | EM1900682-025 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| 4.4'-DDT | 50-29-3 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | ---- | <10 | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | ---- | <50 | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | ---- | <10 | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | <50 | ---- | <50 | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | ---- | <50 | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | <100 | ---- | <100 | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | <50 | ---- | <50 | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | ---- | <50 | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | ---- | <10 | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 105 | ---- | 110 | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 78.6 | ---- | 80.9 | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 83.0 | ---- | 88.3 | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 85.4 | ---- | 96.6 | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 65.7 | ---- | 83.8 | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 47.8 | ---- | 61.0 | ---- | ---- |



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Sub-Matrix: **SOIL**
 (Matrix: **SOIL**)

Client sample ID

| | | | | CPT123_BH46_17011
9_0.5 | CPT123_BH46_17011
9_1.5 | CPT_QC104_170119 | ---- | ---- |
|---|------------|-------|------|----------------------------|----------------------------|-------------------|-------|-------|
| Client sampling date / time | | | | 17-Jan-2019 13:45 | 17-Jan-2019 13:55 | 17-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1900682-020 | EM1900682-022 | EM1900682-025 | ----- | ----- |
| | | | | Result | Result | Result | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 81.0 | ---- | 112 | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 59.3 | ---- | 73.1 | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 36.0 | ---- | 50.8 | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 58.2 | ---- | 81.1 | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 76.3 | ---- | 103 | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 96.1 | ---- | 123 | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC314_170119 | CPT_QC414_170119 | CPT_QC524_170119 | CPT_QC525_170119 | CPT_QC526_170119 |
|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900682-026 | EM1900682-027 | EM1900682-028 | EM1900682-029 | EM1900682-030 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | 7.83 | ---- | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | ---- | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | ---- | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | ---- | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | ---- | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | ---- | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | ---- | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | ---- | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | ---- | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC314_170119 | CPT_QC414_170119 | CPT_QC524_170119 | CPT_QC525_170119 | CPT_QC526_170119 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900682-026 | EM1900682-027 | EM1900682-028 | EM1900682-029 | EM1900682-030 |
| | | | | | Result | Result | Result | Result | Result |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC314_170119 | CPT_QC414_170119 | CPT_QC524_170119 | CPT_QC525_170119 | CPT_QC526_170119 |
|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900682-026 | EM1900682-027 | EM1900682-028 | EM1900682-029 | EM1900682-030 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC314_170119 | CPT_QC414_170119 | CPT_QC524_170119 | CPT_QC525_170119 | CPT_QC526_170119 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900682-026 | EM1900682-027 | EM1900682-028 | EM1900682-029 | EM1900682-030 |
| | | | | | Result | Result | Result | Result | Result |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 87.3 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 97.0 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 95.2 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 96.1 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 27.6 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 67.1 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 68.3 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 88.3 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 86.0 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 89.5 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | CPT_QC314_170119 | CPT_QC414_170119 | CPT_QC524_170119 | CPT_QC525_170119 | CPT_QC526_170119 |
|---|------------|------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 | 17-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900682-026 | EM1900682-027 | EM1900682-028 | EM1900682-029 | EM1900682-030 |
| | | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.25 | % | | 33.6 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.25 | % | | 79.1 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.25 | % | | 86.4 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.25 | % | | 87.1 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.25 | % | | 89.5 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.25 | % | | 102 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.25 | % | | 101 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.25 | % | | 94.8 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 101 | 90.4 | 101 | 101 | 105 |
| Toluene-D8 | 2037-26-5 | 2 | % | | 98.1 | 70.7 | 93.4 | 91.3 | 94.7 |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 108 | 88.1 | 100 | 99.8 | 103 |



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| | | | |
|---|-------------------|-----------------|------|
| Sub-Matrix: SOIL | | □□□□ □ □□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

| | | | |
|---|-------------------|-----------------|------|
| Sub-Matrix: WATER | | □□□□ □ □□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 13 | 90 |
| 2-Chlorophenol-D4 | 93951-73-6 | 42 | 117 |
| 2,4,6-Tribromophenol | 118-79-6 | 52 | 140 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 49 | 136 |

| Sub-Matrix: WATER | | □□□□ □□□ □ s □ | |
|--|------------|----------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 49 | 128 |
| 2-Fluorobiphenyl | 321-60-8 | 57 | 137 |
| Anthracene-d10 | 1719-06-8 | 67 | 137 |
| 4-Terphenyl-d14 | 1718-51-0 | 66 | 136 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900682 | Page | : 1 of 14 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 17-Jan-2019 17:15 |
| Order number | : ---- | Date Analysed | : 21-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 29-Jan-2019 15:37 |
| No. of samples received | : 30 | | |
| No. of samples analysed | : 18 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT073_BH27 | | CPT073_BH27 | | CPT067_BH24 | | CPT067_BH24 | | CPT104_BH38 | |
|--|--------------|------|---------|--------------------|---------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------|---------------|---------------|---------------|---------------|
| | | | | Sampling date/time | | 170119_0.2 | | 170119_0.5 | | 170119_0.2 | | 170119_0.5 | | 170119_0.2 | |
| | | | | | | | | | | | | | | | |
| Compound | Method | LOR | Unit | 0000 00 | 0000 00 | 17-Jan-2019
08:20 | 17-Jan-2019
08:25 | 17-Jan-2019
09:45 | 17-Jan-2019
09:45 | 17-Jan-2019
11:10 | EM1900682-001 | EM1900682-002 | EM1900682-007 | EM1900682-008 | EM1900682-013 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.2 | 5.7 | 5.3 | 5.7 | 4.5 | | | | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | 6 | <5 | <5 | <5 | | | | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | <1 | | | | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 10 | 6 | <5 | <5 | 25 | | | | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 13 | 13 | <5 | <5 | 18 | | | | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | <2 | <2 | | | | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 10 | 10 | <2 | <2 | 15 | | | | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | <5 | | | | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | <2 | | | | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 8 | 7 | <5 | <5 | 10 | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | | | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | 1 | <1 | <1 | <1 | 1 | | | | | |
| EK040T: Fluoride Total | | | | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 260 | 230 | 40 | 40 | 200 | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | <1 | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT073_BH27
_170119_0.2 | CPT073_BH27
_170119_0.5 | CPT067_BH24
_170119_0.2 | CPT067_BH24
_170119_0.5 | CPT104_BH38
_170119_0.2 |
|--|--------------|------|-------|--------------------|--------------|--------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 17-Jan-2019
08:20 | 17-Jan-2019
08:25 | 17-Jan-2019
09:45 | 17-Jan-2019
09:45 | 17-Jan-2019
11:10 |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900682-001 | EM1900682-002 | EM1900682-007 | EM1900682-008 | EM1900682-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | | <0.05 | <0.05 | <0.05 | <0.05 | 0.30 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | | 160 | <50 | <50 | <50 | 290 |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT073_BH27 | CPT073_BH27 | CPT067_BH24 | CPT067_BH24 | CPT104_BH38 |
|--|--------------|------|---------|------------------|---------------|----------------------|----------------------|----------------------|----------------------|----------------------|-------------|-------------|
| | | | | 170119_0.2 | 170119_0.5 | | | 170119_0.2 | 170119_0.5 | 170119_0.2 | | |
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 17-Jan-2019
08:20 | 17-Jan-2019
08:25 | 17-Jan-2019
09:45 | 17-Jan-2019
09:45 | 17-Jan-2019
11:10 | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □□ | □□□□
□□ □□ | EM1900682-001 | EM1900682-002 | EM1900682-007 | EM1900682-008 | EM1900682-013 | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.2 | 5.7 | 5.3 | 5.7 | 4.5 | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | 6 | <5 | <5 | <5 | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | <1 | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 10 | 6 | <5 | <5 | 25 | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 13 | 13 | <5 | <5 | 18 | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | <2 | <2 | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 10 | 10 | <2 | <2 | 15 | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | <2 | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | <5 | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 8 | 7 | <5 | <5 | 10 | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | 1 | <1 | <1 | <1 | 1 | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 260 | 230 | 40 | 40 | 200 | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | <1 | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT073_BH27
_170119_0.2 | CPT073_BH27
_170119_0.5 | CPT067_BH24
_170119_0.2 | CPT067_BH24
_170119_0.5 | CPT104_BH38
_170119_0.2 |
|--|--------------|------|-------|------------------|-------|------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Sampling date/time | | | | | | | 17-Jan-2019
08:20 | 17-Jan-2019
08:25 | 17-Jan-2019
09:45 | 17-Jan-2019
09:45 | 17-Jan-2019
11:10 |
| Compound | Method | LOR | Unit | | | | EM1900682-001 | EM1900682-002 | EM1900682-007 | EM1900682-008 | EM1900682-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.30 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | 160 | <50 | <50 | <50 | <50 | 290 |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT073_BH27
_170119_0.2 | CPT073_BH27
_170119_0.5 | CPT067_BH24
_170119_0.2 | CPT067_BH24
_170119_0.5 | CPT104_BH38
_170119_0.2 |
|--|--------------|------|---------|--------------------|---------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□□□ □□ | □□□□ □□ | 17-Jan-2019
08:20 | 17-Jan-2019
08:25 | 17-Jan-2019
09:45 | 17-Jan-2019
09:45 | 17-Jan-2019
11:10 |
| | | | | □□ □□ | □□□□ | EM1900682-001 | EM1900682-002 | EM1900682-007 | EM1900682-008 | EM1900682-013 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.2 | 5.7 | 5.3 | 5.7 | 4.5 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | 6 | <5 | <5 | <5 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | <1 |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 10 | 6 | <5 | <5 | 25 |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 13 | 13 | <5 | <5 | 18 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | <2 | <2 |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 10 | 10 | <2 | <2 | 15 |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | <5 |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | <2 |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | <5 |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 8 | 7 | <5 | <5 | 10 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | 1 | <1 | <1 | <1 | 1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 260 | 230 | 40 | 40 | 200 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT073_BH27
_170119_0.2 | CPT073_BH27
_170119_0.5 | CPT067_BH24
_170119_0.2 | CPT067_BH24
_170119_0.5 | CPT104_BH38
_170119_0.2 |
|--|--------------|------|-------|--------------------|--------------|--------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 17-Jan-2019
08:20 | 17-Jan-2019
08:25 | 17-Jan-2019
09:45 | 17-Jan-2019
09:45 | 17-Jan-2019
11:10 |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900682-001 | EM1900682-002 | EM1900682-007 | EM1900682-008 | EM1900682-013 |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | 0.30 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | 160 | <50 | <50 | <50 | <50 | 290 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| Sub-Matrix: SOIL | | | | Client sample ID | | | | CPT104_BH38
_170119_0.5 | CPT123_BH46
_170119_0.2 | CPT123_BH46
_170119_0.5 | CPT_QC104_1
70119 | ---- |
|--|--------------|------|---------|------------------|--------------|----------------------|----------------------|----------------------------|----------------------------|----------------------------|----------------------|------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 17-Jan-2019
11:15 | 17-Jan-2019
13:40 | 17-Jan-2019
13:45 | 17-Jan-2019
15:00 | ---- | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | EM1900682-014 | EM1900682-019 | EM1900682-020 | EM1900682-025 | ----- | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 4.6 | 4.7 | 5.0 | 4.9 | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | <5 | <5 | <5 | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 30 | 10 | 6 | <5 | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 19 | 14 | 13 | <5 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | <2 | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 16 | 8 | 5 | 2 | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 8 | 8 | <5 | 8 | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | 1 | 1 | <1 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 180 | 100 | 100 | 50 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | | CPT104_BH38
_170119_0.5 | CPT123_BH46
_170119_0.2 | CPT123_BH46
_170119_0.5 | CPT_QC104_1
70119 | ---- |
|--|--------------|------|-------|--------------------|--------------|--------------|----------------------------|----------------------------|----------------------------|----------------------|-------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 17-Jan-2019
11:15 | 17-Jan-2019
13:40 | 17-Jan-2019
13:45 | 17-Jan-2019
15:00 | ---- |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900682-014 | EM1900682-019 | EM1900682-020 | EM1900682-025 | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 400 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 16 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 50 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 2600 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 40000 | 260 | 210 | <50 | <50 | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT104_BH38_170119_0.5 | CPT123_BH46_170119_0.2 | CPT123_BH46_170119_0.5 | CPT_QC104_170119 | ---- |
|--|--------------|------|---------|--------------------|--------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|-------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | 17-Jan-2019
11:15
EM1900682-014 | 17-Jan-2019
13:40
EM1900682-019 | 17-Jan-2019
13:45
EM1900682-020 | 17-Jan-2019
15:00
EM1900682-025 | ----- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.6 | 4.7 | 5.0 | 4.9 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 30 | 10 | 6 | <5 | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 19 | 14 | 13 | <5 | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | <2 | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 16 | 8 | 5 | 2 | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 8 | 8 | <5 | 8 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | 1 | 1 | <1 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 180 | 100 | 100 | 50 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT104_BH38
_170119_0.5 | CPT123_BH46
_170119_0.2 | CPT123_BH46
_170119_0.5 | CPT_QC104_1
70119 | ---- |
|--|--------------|------|-------|--------------------|--------------|--------------|----------------------------|----------------------------|----------------------------|----------------------|-------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 17-Jan-2019
11:15 | 17-Jan-2019
13:40 | 17-Jan-2019
13:45 | 17-Jan-2019
15:00 | ---- |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900682-014 | EM1900682-019 | EM1900682-020 | EM1900682-025 | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 100 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 10 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 650 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 10000 | 260 | 210 | <50 | <50 | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT104_BH38_170119_0.5 | CPT123_BH46_170119_0.2 | CPT123_BH46_170119_0.5 | CPT_QC104_170119 | ---- |
|--|--------------|------|---------|--------------------|--------------|------------------------|------------------------|------------------------|----------------------|-------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | 17-Jan-2019
11:15 | 17-Jan-2019
13:40 | 17-Jan-2019
13:45 | 17-Jan-2019
15:00 | ----- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.6 | 4.7 | 5.0 | 4.9 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | <5 | <5 | <5 | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 30 | 10 | 6 | <5 | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 19 | 14 | 13 | <5 | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | <2 | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 16 | 8 | 5 | 2 | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 8 | 8 | <5 | 8 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | 1 | 1 | <1 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 180 | 100 | 100 | 50 | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | | |
|---|--------------|------|-------|------------------|------|-------|------------------------|------------------------|------------------------|-------------------|-------|
| Sub-Matrix: SOIL | | | | Client sample ID | | | CPT104_BH38_170119_0.5 | CPT123_BH46_170119_0.2 | CPT123_BH46_170119_0.5 | CPT_QC104_170119 | ---- |
| Sampling date/time | | | | | | | 17-Jan-2019 11:15 | 17-Jan-2019 13:40 | 17-Jan-2019 13:45 | 17-Jan-2019 15:00 | ---- |
| Compound | Method | LOR | Unit | | | | EM1900682-014 | EM1900682-019 | EM1900682-020 | EM1900682-025 | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | 260 | 210 | <50 | <50 | <50 | ---- |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900682 | Page | : 1 of 24 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 17-Jan-2019 |
| Order number | : ---- | Date Analysis Commenced | : 21-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 29-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : GIJPP Groundwater Study | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 30 | | |
| No. of samples analysed | : 18 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□□□ □□ □□

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

□□□□□□

Non-metals prep supervisor
Senior Inorganic Chemist
Senior Inorganic Instrument Chemist
Senior Acid Sulfate Soil Chemist
Senior Organic Chemist

□□□ □□□ □□ □□ □

Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2150472) | | | | | | | | | |
| EM1900654-005 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 7.5 | 7.5 | 0.00 | 0% - 20% |
| EM1900681-025 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.3 | 5.4 | 1.87 | 0% - 20% |
| EA029-A: pH Measurements (QC Lot: 2153474) | | | | | | | | | |
| EM1900682-008 | CPT067_BH24_170119_0.5 | EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | 6.0 | 6.0 | 0.00 | 0% - 20% |
| | | EA029: pH OX (23B) | ---- | 0.1 | pH Unit | 4.4 | 4.5 | 3.13 | 0% - 20% |
| EA029-B: Acidity Trail (QC Lot: 2153474) | | | | | | | | | |
| EM1900682-008 | CPT067_BH24_170119_0.5 | EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | 4 | 3 | 0.00 | No Limit |
| | | EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | 4 | 3 | 0.00 | No Limit |
| EA029-C: Sulfur Trail (QC Lot: 2153474) | | | | | | | | | |
| EM1900682-008 | CPT067_BH24_170119_0.5 | EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-D: Calcium Values (QC Lot: 2153474) | | | | | | | | | |
| EM1900682-008 | CPT067_BH24_170119_0.5 | EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | 0.037 | 0.036 | 0.00 | No Limit |
| | | EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | 0.036 | 0.038 | 5.67 | No Limit |
| | | EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | <0.020 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA029-D: Calcium Values (QC Lot: 2153474) - continued | | | | | | | | | |
| EM1900682-008 | CPT067_BH24_170119_0.5 | EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-E: Magnesium Values (QC Lot: 2153474) | | | | | | | | | |
| EM1900682-008 | CPT067_BH24_170119_0.5 | EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-H: Acid Base Accounting (QC Lot: 2153474) | | | | | | | | | |
| EM1900682-008 | CPT067_BH24_170119_0.5 | EA029: ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 0.00 | No Limit |
| | | EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA029: Liming Rate | ---- | 1 | kg CaCO3/t | <1 | <1 | 0.00 | No Limit |
| | | EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | <1 | 0.00 | No Limit |
| | | EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| | | EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA033-A: Actual Acidity (QC Lot: 2153473) | | | | | | | | | |
| EM1900681-002 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 7.8 | 7.7 | 1.29 | 0% - 20% |
| EM1900682-014 | CPT104_BH38_170119_0.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.08 | 0.07 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 47 | 45 | 4.45 | 0% - 20% |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 4.5 | 4.6 | 2.20 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2153473) | | | | | | | | | |
| EM1900681-002 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.007 | 0.007 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EM1900682-014 | CPT104_BH38_170119_0.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.009 | 0.009 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2149039) | | | | | | | | | |
| EM1900681-001 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 22.3 | 22.4 | 0.604 | 0% - 20% |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EA055: Moisture Content | ---- | 0.1 | % | 22.6 | 21.5 | 4.74 | 0% - 20% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2148801) | | | | | | | | | |
| EM1900681-008 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 8 | 8 | 0.00 | No Limit |

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005T: Total Metals by ICP-AES (QC Lot: 2148801) - continued | | | | | | | | | |
| EM1900681-008 | Anonymous | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 12 | 12 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 20 | 20 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900682-008 | CPT067_BH24_170119_0.5 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2148802) | | | | | | | | | |
| EM1900681-008 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900682-008 | CPT067_BH24_170119_0.5 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2148770) | | | | | | | | | |
| EM1900601-020 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900681-025 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2151084) | | | | | | | | | |
| EM1900681-008 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900533-006 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2151088) | | | | | | | | | |
| EM1900682-014 | CPT104_BH38_170119_0.5 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | 1 | 1 | 0.00 | No Limit |
| EM1900695-002 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2145722) | | | | | | | | | |
| EM1900668-001 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 220 | 210 | 0.00 | No Limit |
| EM1900681-014 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 250 | 210 | 19.9 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2145723) | | | | | | | | | |
| EM1900682-020 | CPT123_BH46_170119_0.5 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 100 | 90 | 0.00 | No Limit |
| EM1900690-022 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 100 | 100 | 0.00 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2147757) | | | | | | | | | |
| EM1900681-001 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2145440) | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---------------------------------------|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2145440) - continued | | | | | | | | | |
| EM1900681-001 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2145440) | | | | | | | | | |
| EM1900681-001 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2145440) | | | | | | | | | |
| EM1900681-001 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2145440) - continued | | | | | | | | | |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit | | |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2147755) | | | | | | | | | |
| EM1900681-001 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2147755) | | | | | | | | | |
| EM1900681-001 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2147755) - continued | | | | | | | | | |
| EM1900681-001 | Anonymous | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2147755) | | | | | | | | | |
| EM1900681-001 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2147755) - continued | | | | | | | | | |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| EP075I: Organochlorine Pesticides (QC Lot: 2147755) | | | | | | | | | |
| EM1900681-001 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------------|---|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2147755) - continued | | | | | | | | | |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2145440) | | | | | | | | | |
| EM1900681-001 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2147756) | | | | | | | | | |
| EM1900681-001 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | 210 | 190 | 9.06 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | 280 | 250 | 14.5 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2145440) | | | | | | | | | |
| EM1900681-001 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2147756) | | | | | | | | | |
| EM1900681-001 | Anonymous | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | 400 | 350 | 13.1 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | 140 | 140 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1900682-002 | CPT073_BH27_170119_0.5 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2145539) | | | | | | | | | |
| EM1900615-001 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.21 | 7.24 | 0.415 | 0% - 20% |
| EM1900610-009 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 8.30 | 8.28 | 0.241 | 0% - 20% |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2147688) | | | | | | | | | |
| EM1900641-029 | Anonymous | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2147692) | | | | | | | | | |
| EM1900655-004 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900749-004 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.002 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.065 | 0.067 | 1.86 | 0% - 50% |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2147689) | | | | | | | | | |
| EM1900649-016 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900641-029 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2146936) | | | | | | | | | |
| EM1900641-029 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900681-020 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2145901) | | | | | | | | | |
| EM1900680-010 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | 0.319 | 0.308 | 3.48 | 0% - 20% |
| EK040P: Fluoride by PC Titrator (QC Lot: 2145536) | | | | | | | | | |
| EM1900533-002 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900596-005 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.3 | 0.3 | 0.00 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2150300) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2145257) - continued | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2145257) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2150299) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | | 205-82-3 | | | | | | |
| | | EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Indeno(1,2,3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| | | EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | <1.0 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2145256) | | | | | | | | | |
| EM1900632-037 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900594-029 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2145260) | | | | | | | | | |
| EM1900681-021 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900682-027 | CPT_QC414_170119 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2150298) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2145256) | | | | | | | | | |
| EM1900632-037 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900594-029 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2145260) | | | | | | | | | |
| EM1900681-021 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900682-027 | CPT_QC414_170119 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2150298) | | | | | | | | | |
| EM1900594-029 | Anonymous | EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2145256) | | | | | | | | | |
| EM1900632-037 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EM1900594-029 | Anonymous | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2145260) | | | | | | | | | |
| EM1900681-021 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |

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 Work Order : EM1900682
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080: BTEXN (QC Lot: 2145260) - continued | | | | | | | | | |
| EM1900682-027 | CPT_QC414_170119 | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA029-A: pH Measurements (QCLot: 2153474) | | | | | | | | |
| EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA029: pH OX (23B) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 101 | 70 | 130 |
| EA029-B: Acidity Trail (QCLot: 2153474) | | | | | | | | |
| EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 86.9 | 70 | 130 |
| EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | <2 | 29.1 mole H+ / t | 87.6 | 70 | 130 |
| EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | <2 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-C: Sulfur Trail (QCLot: 2153474) | | | | | | | | |
| EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | 0.052 % S | 93.2 | 70 | 130 |
| EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | <0.020 | 0.145 % S | 94.7 | 70 | 130 |
| EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029-D: Calcium Values (QCLot: 2153474) | | | | | | | | |
| EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | <0.020 | 0.151 % Ca | 116 | 70 | 130 |
| EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | <0.020 | 0.296 % Ca | 97.8 | 70 | 130 |
| EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-E: Magnesium Values (QCLot: 2153474) | | | | | | | | |
| EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | <0.020 | 0.176 % Mg | 106 | 70 | 130 |
| EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | <0.020 | 0.175 % Mg | 103 | 70 | 130 |
| EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | ---- | ---- | ---- | ---- |
| EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting (QCLot: 2153474) | | | | | | | | |
| EA029: ANC Fineness Factor | ---- | 0.5 | - | <0.5 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |



| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|-------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA033-A: Actual Acidity (QCLot: 2153473) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 89.1 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2153473) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 94.4 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES (QCLot: 2148801) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 91.9 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 85.8 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 85.4 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 89.8 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 88.9 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 94.5 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 96.6 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 84.1 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 85.1 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 91.7 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2148802) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 86.4 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2148770) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 101 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2151084) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 99.2 | 80 | 107 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2151088) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 95.0 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2145722) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 88.8 | 75 | 110 |
| EK040T: Fluoride Total (QCLot: 2145723) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 85.2 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2147757) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 118 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2145440) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 98.5 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 116 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 110 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 106 | 66 | 115 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2145440) - continued | | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 95.9 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 100 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2145440) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 86.8 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2145440) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 119 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 93.0 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 87.4 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 94.1 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 91.2 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 83.0 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 80.4 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 74.4 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 84.3 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 95.3 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 80.2 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 112 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 86.2 | 71 | 118 |
| EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 80.6 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 102 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 98.9 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 88.4 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 84.3 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 102 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2147755) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 4 mg/kg | # 68.2 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 77.4 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 81.0 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 93.8 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 89.6 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 89.2 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 82.0 | 65 | 124 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 8 mg/kg | 92.1 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 8 mg/kg | 80.2 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2147755) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 4 mg/kg | 67.4 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 4 mg/kg | 78.6 | 65 | 126 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2147755) - continued | | | | | | | | |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 8 mg/kg | 80.3 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 4 mg/kg | 74.9 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 4 mg/kg | 78.0 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 24 mg/kg | 64.4 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 24 mg/kg | 87.8 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 24 mg/kg | 92.2 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 24 mg/kg | 98.6 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 20 mg/kg | 86.9 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2147755) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 70.6 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 76.6 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 69.9 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 85.1 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 86.3 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2.2 mg/kg | 75.4 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 96.1 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 94.2 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 94.2 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 103 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 8 mg/kg | 121 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 72.0 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 130 | 72 | 134 |
| EP075-EM: Dibenzo(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 4 mg/kg | # 141 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 122 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2147755) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 95.4 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 77.8 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 123 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 99.6 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 93.1 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 76.5 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 90.5 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 96.3 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 100 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 100 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 103 | 64 | 137 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 102 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 99.5 | 72 | 132 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2147689) - continued | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 93.9 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2146936) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 109 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145901) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 88.7 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2145536) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 95.8 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2150300) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 80.6 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2145257) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 102 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2145257) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 104 | 53 | 135 |
| EP074: 1.1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 92.6 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 104 | 83 | 122 |
| EP074: trans-1.2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 77.3 | 68 | 119 |
| EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 82.4 | 77 | 118 |
| EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 76.4 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 70.7 | 62 | 117 |
| EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 85.4 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 93.9 | 67 | 120 |
| EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 98.8 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 98.7 | 67 | 120 |
| EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 87.6 | 76 | 112 |
| EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 103 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 112 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2145257) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 101 | 81 | 116 |
| EP074: 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 101 | 75 | 118 |
| EP074: 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 97.9 | 81 | 113 |
| EP074: 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 109 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2145257) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 83.2 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2150299) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 92.7 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 111 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 97.6 | 53 | 117 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2150299) - continued | | | | | | | | |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 105 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 100 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 99.3 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 106 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 102 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 104 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 97.5 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | 5 µg/L | 97.0 | 56 | 131 |
| | 205-82-3 | | | | | | | |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 99.8 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 98.2 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 97.6 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 99.1 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 100 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2146988) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 93.8 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 107 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 120 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 109 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 124 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 124 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 20 µg/L | 116 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5 | 2 | µg/L | <2 | 30 µg/L | 117 | 53 | 125 |
| | 8-90-2 | | | | | | | |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 121 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2146988) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 4 | µg/L | <4 | 10 µg/L | 44.7 | 18 | 51 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | 10 µg/L | 90.2 | 49 | 106 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | 20 µg/L | 83.0 | 41 | 91 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | 10 µg/L | 112 | 48 | 120 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | 10 µg/L | 104 | 47 | 128 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | 60 µg/L | 102 | 41 | 130 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | 60 µg/L | 42.7 | 19 | 49 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | 60 µg/L | 93.2 | 47 | 126 |
| EP075-EM: Dinoseb | 88-85-7 | 50 | µg/L | <50 | 60 µg/L | 118 | 49 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | 50 µg/L | 125 | 61 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2146988) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 10 µg/L | 115 | 57 | 126 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2146988) - continued | | | | | | | | |
| EP075-EM: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 123 | 62 | 134 |
| EP075-EM: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 108 | 58 | 133 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 116 | 60 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 114 | 59 | 132 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 124 | 61 | 137 |
| EP075-EM: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 10 µg/L | 114 | 59 | 130 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 135 | 59 | 135 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | 10 µg/L | # 140 | 59 | 128 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145256) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 106 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145260) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 82.4 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2150298) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 54.9 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 63.5 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 63.0 | 55 | 130 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145256) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 109 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145260) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 81.9 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2150298) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 57.6 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 64.1 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 63.8 | 53 | 136 |
| EP080: BTEXN (QCLot: 2145256) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 108 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 108 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 110 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | 40 µg/L | 107 | 72 | 129 |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 106 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 103 | 70 | 125 |
| EP080: BTEXN (QCLot: 2145260) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 84.9 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 86.9 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 86.8 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | 40 µg/L | 89.7 | 72 | 129 |

Page : 22 of 24
 Work Order : EM1900682
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|---------|---|------|-----------------------------|---------------------------------------|--------------------|---------------------|--------|
| | | | | | Spike | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | Method: Compound | CAS Number | LOR | Unit | Result |
| EP080: BTEXN (QCLot: 2145260) - continued | | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 93.4 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 95.7 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2148801) | | | | | | | |
| EM1900681-013 | Anonymous | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 90.1 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 90.4 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 92.8 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 91.7 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 86.6 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 91.8 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 89.4 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 91.4 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2148802) | | | | | | | |
| EM1900681-013 | Anonymous | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 97.1 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2148770) | | | | | | | |
| EM1900681-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | # 3.82 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2151084) | | | | | | | |
| EM1900533-011 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 87.3 | 77 | 113 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2151088) | | | | | | | |
| EM1900682-019 | CPT123_BH46_170119_0.2 | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 105 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2145722) | | | | | | | |
| EM1900668-011 | Anonymous | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 112 | 70 | 130 |
| EK040T: Fluoride Total (QCLot: 2145723) | | | | | | | |
| EM1900682-025 | CPT_QC104_170119 | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 90.0 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2147757) | | | | | | | |
| EM1900681-008 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 127 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2145440) | | | | | | | |
| EM1900681-002 | Anonymous | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 70.7 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 81.2 | 56 | 134 |

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|-----------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP074I: Volatile Halogenated Compounds (QCLOT: 2145440) | | | | | | | |
| EM1900681-002 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 54.3 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 64.2 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 79.0 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLOT: 2147755) | | | | | | | |
| EM1900681-002 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 2 mg/kg | 75.4 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 2 mg/kg | 110 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 2 mg/kg | 75.0 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLOT: 2147755) | | | | | | | |
| EM1900681-002 | Anonymous | EP075-EM: Phenol | 108-95-2 | 2 mg/kg | 87.5 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 2 mg/kg | 75.6 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLOT: 2147755) | | | | | | | |
| EM1900681-002 | Anonymous | EP075-EM: Acenaphthene | 83-32-9 | 2 mg/kg | 80.2 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 2 mg/kg | 112 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLOT: 2145440) | | | | | | | |
| EM1900681-002 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 72.8 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLOT: 2147756) | | | | | | | |
| EM1900681-007 | Anonymous | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 106 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 112 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 111 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLOT: 2145440) | | | | | | | |
| EM1900681-002 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 69.3 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLOT: 2147756) | | | | | | | |
| EM1900681-007 | Anonymous | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 113 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 113 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 102 | 44 | 126 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|---|------------------|-------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2147692) | | | | | | | |
| EM1900655-004 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 97.4 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 94.0 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 94.5 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 91.2 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 97.8 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 97.9 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2147689) | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|-----------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2147689) - continued | | | | | | | |
| EM1900649-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 87.2 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2146936) | | | | | | | |
| EM1900656-019 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 109 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2145901) | | | | | | | |
| EM1900680-011 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 mg/L | 98.3 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2145536) | | | | | | | |
| EM1900596-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 92.6 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2145257) | | | | | | | |
| EM1900529-025 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 111 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 89.4 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2145257) | | | | | | | |
| EM1900529-025 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 99.8 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145256) | | | | | | | |
| EM1900529-025 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 83.9 | 43 | 125 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2145260) | | | | | | | |
| EM1900679-005 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 73.7 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145256) | | | | | | | |
| EM1900529-025 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 83.9 | 44 | 122 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2145260) | | | | | | | |
| EM1900679-005 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 72.9 | 44 | 122 |
| EP080: BTEXN (QCLot: 2145256) | | | | | | | |
| EM1900529-025 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 103 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 105 | 72 | 132 |
| EP080: BTEXN (QCLot: 2145260) | | | | | | | |
| EM1900679-005 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 100 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 102 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1900682**

Page : 1 of 16

Client : **AECOM Australia Pty Ltd**
Contact : **[REDACTED]**
Project : 60592634
Site : GIJPP Groundwater Study
Sampler : **[REDACTED]**
Order number : ----

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 17-Jan-2019
Issue Date : 29-Jan-2019
No. of samples received : 30
No. of samples analysed : 18

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|-----------------------|------------|--------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | QC-2147755-001 | ---- | 2-Chlorophenol | 95-57-8 | 68.2 % | 69-123% | Recovery less than lower control limit |
| EP075B: Polynuclear Aromatic Hydrocarbons | QC-2147755-001 | ---- | Dibenz(a,h)anthracene | 53-70-3 | 141 % | 72-135% | Recovery greater than upper control limit |
| EP075I: Organochlorine Pesticides | QC-2147755-001 | ---- | Endrin | 72-20-8 | 18.8 % | 55-148% | Recovery less than lower control limit |
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | EM1900681--001 | Anonymous | Hexavalent Chromium | 18540-29-9 | 3.82 % | 58-114% | Recovery less than lower data quality objective |

Matrix: **WATER**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|----------|------------|-------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2146988-001 | ---- | 4,4'-DDT | 50-29-3 | 140 % | 59-128% | Recovery greater than upper control limit |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
CPT_QC314_170119 | ---- | ---- | ---- | 21-Jan-2019 | 17-Jan-2019 | 4 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| Semivolatile Organic Compounds - Waste Classification | 0 | 6 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 8 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 7 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 6 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 7 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|--|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001)
CPT073_BH27_170119_0.2,
CPT067_BH24_170119_0.2,
CPT104_BH38_170119_0.2,
CPT123_BH46_170119_0.2,
CPT_QC104_170119 | CPT073_BH27_170119_0.5,
CPT067_BH24_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | 17-Jan-2019 | 24-Jan-2019 | 24-Jan-2019 | ✓ | 24-Jan-2019 | 24-Jan-2019 | ✓ |
| EA029-A: pH Measurements | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT067_BH24_170119_0.5, | CPT067_BH24_170119_2.0 | 17-Jan-2019 | 25-Jan-2019 | 12-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA029-B: Acidity Trail | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT067_BH24_170119_0.5, | CPT067_BH24_170119_2.0 | 17-Jan-2019 | 25-Jan-2019 | 12-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA029-C: Sulfur Trail | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT067_BH24_170119_0.5, | CPT067_BH24_170119_2.0 | 17-Jan-2019 | 25-Jan-2019 | 12-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA029-D: Calcium Values | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT067_BH24_170119_0.5, | CPT067_BH24_170119_2.0 | 17-Jan-2019 | 25-Jan-2019 | 12-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA029-E: Magnesium Values | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT067_BH24_170119_0.5, | CPT067_BH24_170119_2.0 | 17-Jan-2019 | 25-Jan-2019 | 12-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA029-F: Excess Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT067_BH24_170119_0.5, | CPT067_BH24_170119_2.0 | 17-Jan-2019 | 25-Jan-2019 | 12-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA029-G: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT067_BH24_170119_0.5, | CPT067_BH24_170119_2.0 | 17-Jan-2019 | 25-Jan-2019 | 12-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA029-H: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen (EA029)
CPT067_BH24_170119_0.5, | CPT067_BH24_170119_2.0 | 17-Jan-2019 | 25-Jan-2019 | 12-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA033)
CPT073_BH27_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | CPT073_BH27_170119_1.5,
CPT104_BH38_170119_1.5,
CPT123_BH46_170119_1.5 | 17-Jan-2019 | 25-Jan-2019 | 17-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA033)
CPT073_BH27_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | CPT073_BH27_170119_1.5,
CPT104_BH38_170119_1.5,
CPT123_BH46_170119_1.5 | 17-Jan-2019 | 25-Jan-2019 | 17-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen (EA033)
CPT073_BH27_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | CPT073_BH27_170119_1.5,
CPT104_BH38_170119_1.5,
CPT123_BH46_170119_1.5 | 17-Jan-2019 | 25-Jan-2019 | 17-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen (EA033)
CPT073_BH27_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | CPT073_BH27_170119_1.5,
CPT104_BH38_170119_1.5,
CPT123_BH46_170119_1.5 | 17-Jan-2019 | 25-Jan-2019 | 17-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen (EA033)
CPT073_BH27_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | CPT073_BH27_170119_1.5,
CPT104_BH38_170119_1.5,
CPT123_BH46_170119_1.5 | 17-Jan-2019 | 25-Jan-2019 | 17-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT073_BH27_170119_0.2,
CPT067_BH24_170119_0.2,
CPT104_BH38_170119_0.2,
CPT123_BH46_170119_0.2,
CPT_QC104_170119 | CPT073_BH27_170119_0.5,
CPT067_BH24_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | 17-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 31-Jan-2019 | ✓ |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT073_BH27_170119_0.2,
CPT067_BH24_170119_0.2,
CPT104_BH38_170119_0.2,
CPT123_BH46_170119_0.2,
CPT_QC104_170119 | CPT073_BH27_170119_0.5,
CPT067_BH24_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | 17-Jan-2019 | 24-Jan-2019 | 16-Jul-2019 | ✓ | 25-Jan-2019 | 16-Jul-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T) | | 17-Jan-2019 | 24-Jan-2019 | 14-Feb-2019 | ✓ | 25-Jan-2019 | 14-Feb-2019 | ✓ |
| CPT073_BH27_170119_0.2, | CPT073_BH27_170119_0.5, | | | | | | | |
| CPT067_BH24_170119_0.2, | CPT067_BH24_170119_0.5, | | | | | | | |
| CPT104_BH38_170119_0.2, | CPT104_BH38_170119_0.5, | | | | | | | |
| CPT123_BH46_170119_0.2, | CPT123_BH46_170119_0.5, | | | | | | | |
| CPT_QC104_170119 | | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G) | | 17-Jan-2019 | 22-Jan-2019 | 14-Feb-2019 | ✓ | 23-Jan-2019 | 29-Jan-2019 | ✓ |
| CPT073_BH27_170119_0.2, | CPT073_BH27_170119_0.5, | | | | | | | |
| CPT067_BH24_170119_0.2, | CPT067_BH24_170119_0.5, | | | | | | | |
| CPT104_BH38_170119_0.2, | CPT104_BH38_170119_0.5, | | | | | | | |
| CPT123_BH46_170119_0.2, | CPT123_BH46_170119_0.5, | | | | | | | |
| CPT_QC104_170119 | | | | | | | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF) | | 17-Jan-2019 | 23-Jan-2019 | 31-Jan-2019 | ✓ | 24-Jan-2019 | 06-Feb-2019 | ✓ |
| CPT073_BH27_170119_0.2, | CPT073_BH27_170119_0.5, | | | | | | | |
| CPT067_BH24_170119_0.2, | CPT067_BH24_170119_0.5, | | | | | | | |
| CPT104_BH38_170119_0.2, | CPT104_BH38_170119_0.5, | | | | | | | |
| CPT123_BH46_170119_0.2, | CPT123_BH46_170119_0.5, | | | | | | | |
| CPT_QC104_170119 | | | | | | | | |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T) | | 17-Jan-2019 | 21-Jan-2019 | 14-Feb-2019 | ✓ | 22-Jan-2019 | 14-Feb-2019 | ✓ |
| CPT073_BH27_170119_0.2, | CPT073_BH27_170119_0.5, | | | | | | | |
| CPT067_BH24_170119_0.2, | CPT067_BH24_170119_0.5, | | | | | | | |
| CPT104_BH38_170119_0.2, | CPT104_BH38_170119_0.5, | | | | | | | |
| CPT123_BH46_170119_0.2, | CPT123_BH46_170119_0.5, | | | | | | | |
| CPT_QC104_170119 | | | | | | | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM) | | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| CPT073_BH27_170119_0.2, | CPT073_BH27_170119_0.5, | | | | | | | |
| CPT067_BH24_170119_0.2, | CPT067_BH24_170119_0.5, | | | | | | | |
| CPT104_BH38_170119_0.2, | CPT104_BH38_170119_0.5, | | | | | | | |
| CPT123_BH46_170119_0.2, | CPT123_BH46_170119_0.5, | | | | | | | |
| CPT_QC104_170119 | | | | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 17-Jan-2019 | 21-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 24-Jan-2019 | ✓ |
| CPT073_BH27_170119_0.2, | CPT073_BH27_170119_0.5, | | | | | | | |
| CPT067_BH24_170119_0.2, | CPT067_BH24_170119_0.5, | | | | | | | |
| CPT104_BH38_170119_0.2, | CPT104_BH38_170119_0.5, | | | | | | | |
| CPT123_BH46_170119_0.2, | CPT123_BH46_170119_0.5, | | | | | | | |
| CPT_QC104_170119 | | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|--|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT073_BH27_170119_0.2,
CPT067_BH24_170119_0.2,
CPT104_BH38_170119_0.2,
CPT123_BH46_170119_0.2,
CPT_QC104_170119 | CPT073_BH27_170119_0.5,
CPT067_BH24_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | 17-Jan-2019 | 21-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 24-Jan-2019 | ✓ |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT073_BH27_170119_0.2,
CPT067_BH24_170119_0.2,
CPT104_BH38_170119_0.2,
CPT123_BH46_170119_0.2,
CPT_QC104_170119 | CPT073_BH27_170119_0.5,
CPT067_BH24_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | 17-Jan-2019 | 21-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 24-Jan-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT073_BH27_170119_0.2,
CPT067_BH24_170119_0.2,
CPT104_BH38_170119_0.2,
CPT123_BH46_170119_0.2,
CPT_QC104_170119 | CPT073_BH27_170119_0.5,
CPT067_BH24_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT073_BH27_170119_0.2,
CPT067_BH24_170119_0.2,
CPT104_BH38_170119_0.2,
CPT123_BH46_170119_0.2,
CPT_QC104_170119 | CPT073_BH27_170119_0.5,
CPT067_BH24_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT073_BH27_170119_0.2,
CPT067_BH24_170119_0.2,
CPT104_BH38_170119_0.2,
CPT123_BH46_170119_0.2,
CPT_QC104_170119 | CPT073_BH27_170119_0.5,
CPT067_BH24_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT073_BH27_170119_0.2,
CPT067_BH24_170119_0.2,
CPT104_BH38_170119_0.2,
CPT123_BH46_170119_0.2,
CPT_QC104_170119 | CPT073_BH27_170119_0.5,
CPT067_BH24_170119_0.5,
CPT104_BH38_170119_0.5,
CPT123_BH46_170119_0.5, | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 17-Jan-2019 | 21-Jan-2019 | 24-Jan-2019 | ✔ | 23-Jan-2019 | 24-Jan-2019 | ✔ |
| CPT073_BH27_170119_0.2, | CPT073_BH27_170119_0.5, | | | | | | | |
| CPT067_BH24_170119_0.2, | CPT067_BH24_170119_0.5, | | | | | | | |
| CPT104_BH38_170119_0.2, | CPT104_BH38_170119_0.5, | | | | | | | |
| CPT123_BH46_170119_0.2, | CPT123_BH46_170119_0.5, | | | | | | | |
| CPT_QC104_170119 | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM) | | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| CPT073_BH27_170119_0.2, | CPT073_BH27_170119_0.5, | | | | | | | |
| CPT067_BH24_170119_0.2, | CPT067_BH24_170119_0.5, | | | | | | | |
| CPT104_BH38_170119_0.2, | CPT104_BH38_170119_0.5, | | | | | | | |
| CPT123_BH46_170119_0.2, | CPT123_BH46_170119_0.5, | | | | | | | |
| CPT_QC104_170119 | | | | | | | | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 17-Jan-2019 | 21-Jan-2019 | 24-Jan-2019 | ✔ | 23-Jan-2019 | 24-Jan-2019 | ✔ |
| CPT073_BH27_170119_0.2, | CPT073_BH27_170119_0.5, | | | | | | | |
| CPT067_BH24_170119_0.2, | CPT067_BH24_170119_0.5, | | | | | | | |
| CPT104_BH38_170119_0.2, | CPT104_BH38_170119_0.5, | | | | | | | |
| CPT123_BH46_170119_0.2, | CPT123_BH46_170119_0.5, | | | | | | | |
| CPT_QC104_170119 | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM) | | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✔ | 23-Jan-2019 | 03-Mar-2019 | ✔ |
| CPT073_BH27_170119_0.2, | CPT073_BH27_170119_0.5, | | | | | | | |
| CPT067_BH24_170119_0.2, | CPT067_BH24_170119_0.5, | | | | | | | |
| CPT104_BH38_170119_0.2, | CPT104_BH38_170119_0.5, | | | | | | | |
| CPT123_BH46_170119_0.2, | CPT123_BH46_170119_0.5, | | | | | | | |
| CPT_QC104_170119 | | | | | | | | |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
CPT_QC314_170119 | 17-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 17-Jan-2019 | ✘ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F)
CPT_QC314_170119 | 17-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 16-Jul-2019 | ✔ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
CPT_QC314_170119 | 17-Jan-2019 | ---- | ---- | ---- | 24-Jan-2019 | 14-Feb-2019 | ✔ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Opaque plastic bottle - NaOH (EG050F)
CPT_QC314_170119 | 17-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 14-Feb-2019 | ✔ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| Opaque plastic bottle - NaOH (EK026SF)
CPT_QC314_170119 | 17-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
CPT_QC314_170119 | 17-Jan-2019 | ---- | ---- | ---- | 21-Jan-2019 | 14-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
CPT_QC314_170119 | 17-Jan-2019 | 23-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC314_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC314_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC314_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
CPT_QC314_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
CPT_QC314_170119 | 17-Jan-2019 | 23-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC314_170119 | 17-Jan-2019 | 22-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC314_170119 | 17-Jan-2019 | 22-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
CPT_QC314_170119 | 17-Jan-2019 | 22-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 03-Mar-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC314_170119 | 17-Jan-2019 | 23-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC314_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC414_170119,
CPT_QC525_170119, | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 31-Jan-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
CPT_QC314_170119 | 17-Jan-2019 | 23-Jan-2019 | 24-Jan-2019 | ✓ | 23-Jan-2019 | 04-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC314_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC414_170119, CPT_QC524_170119,
CPT_QC525_170119, CPT_QC526_170119 | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 31-Jan-2019 | ✓ |
| EP080: BTEXN | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC314_170119 | 17-Jan-2019 | 21-Jan-2019 | 31-Jan-2019 | ✓ | 21-Jan-2019 | 31-Jan-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
CPT_QC414_170119, CPT_QC524_170119,
CPT_QC525_170119, CPT_QC526_170119 | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 23-Jan-2019 | 31-Jan-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 6 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 4 | 37 | 10.81 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 4 | 39 | 10.26 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 37 | 5.41 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 39 | 5.13 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 37 | 5.41 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 39 | 5.13 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Total Mercury by FIMS | EG035T | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 37 | 5.41 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 39 | 5.13 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 2 | 19 | 10.53 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 15 | 13.33 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 5 | 20.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 2 | 18 | 11.11 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 2 | 11 | 18.18 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 8 | 12.50 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 7 | 14.29 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 6 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 5 | 20.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 7 | 14.29 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 4 | 31 | 12.90 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 15 | 6.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 5 | 20.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 8 | 12.50 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 7 | 14.29 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 31 | 6.45 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 31 | 6.45 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 8 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 7 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 6 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 7 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 31 | 6.45 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|---------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | SOIL | In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|---|
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |

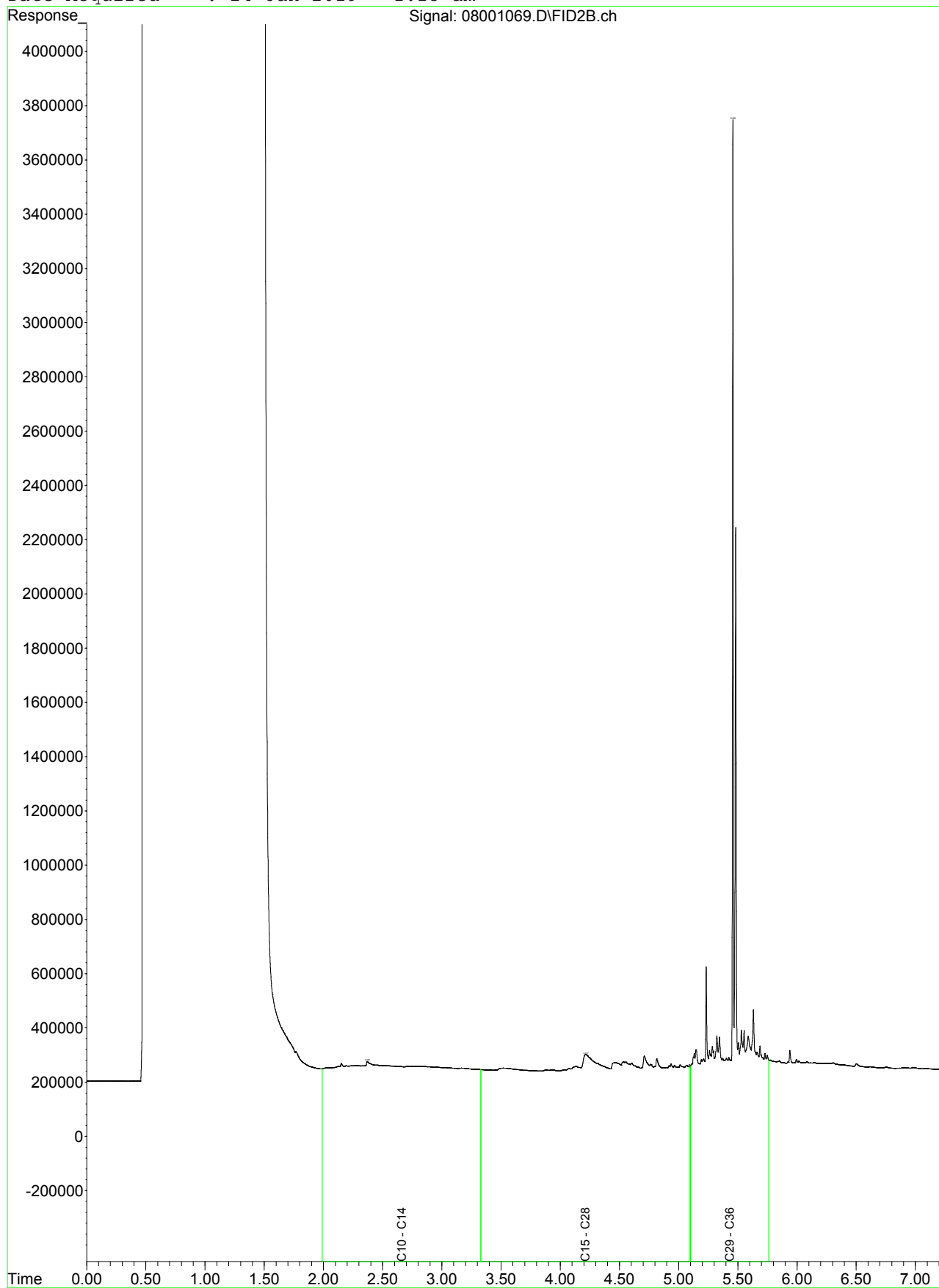


| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Preparation Methods | Method | Matrix | Method Descriptions |
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl2 extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |

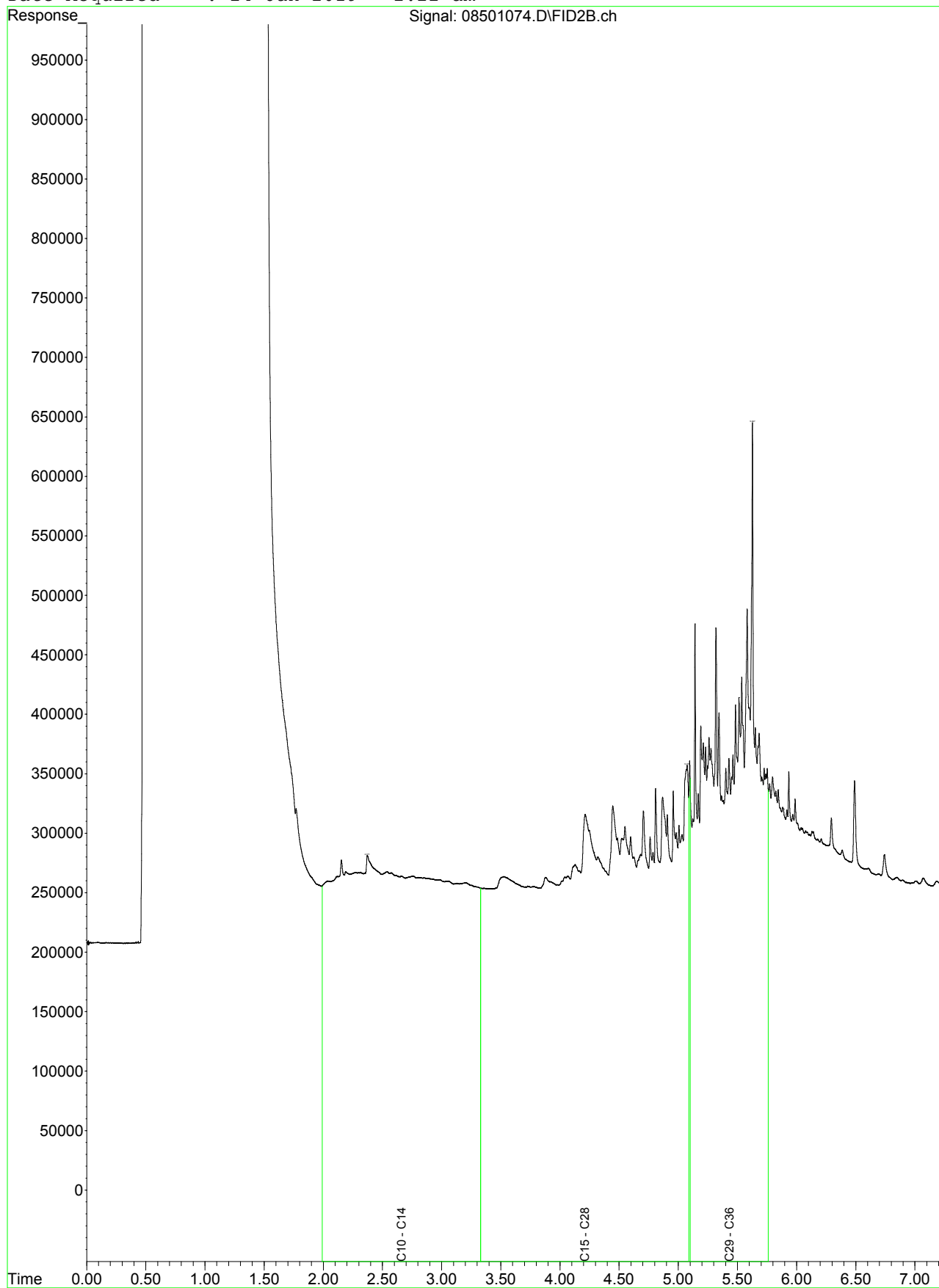


| Preparation Methods | Method | Matrix | Method Descriptions |
|--|----------|--------|---|
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

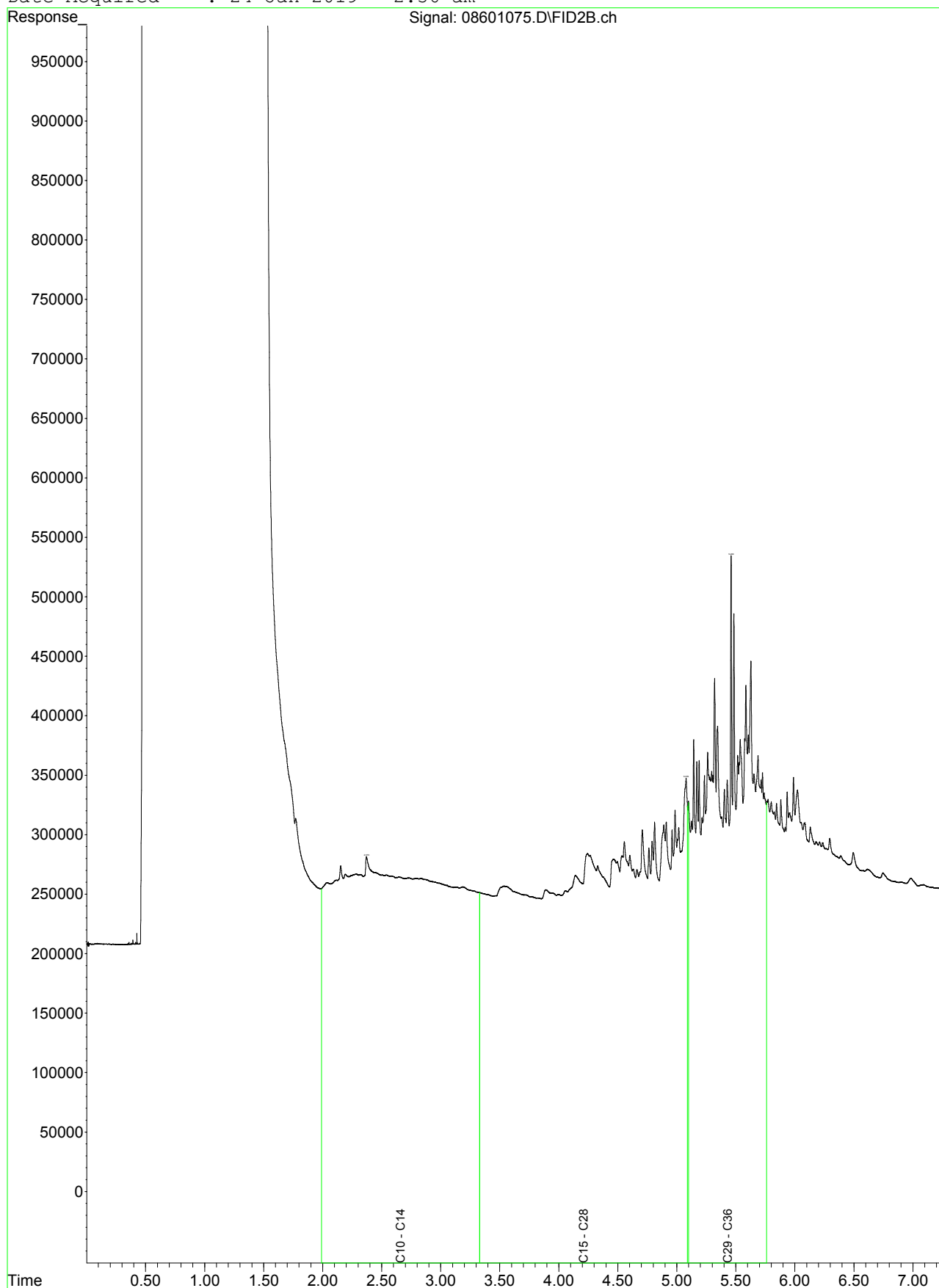
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Data File : 08001069.D
Laboratory Number: EM1900682-001
Sample ID : CPT073_BH27_170119_0.2
Date Acquired : 24 Jan 2019 1:13 am



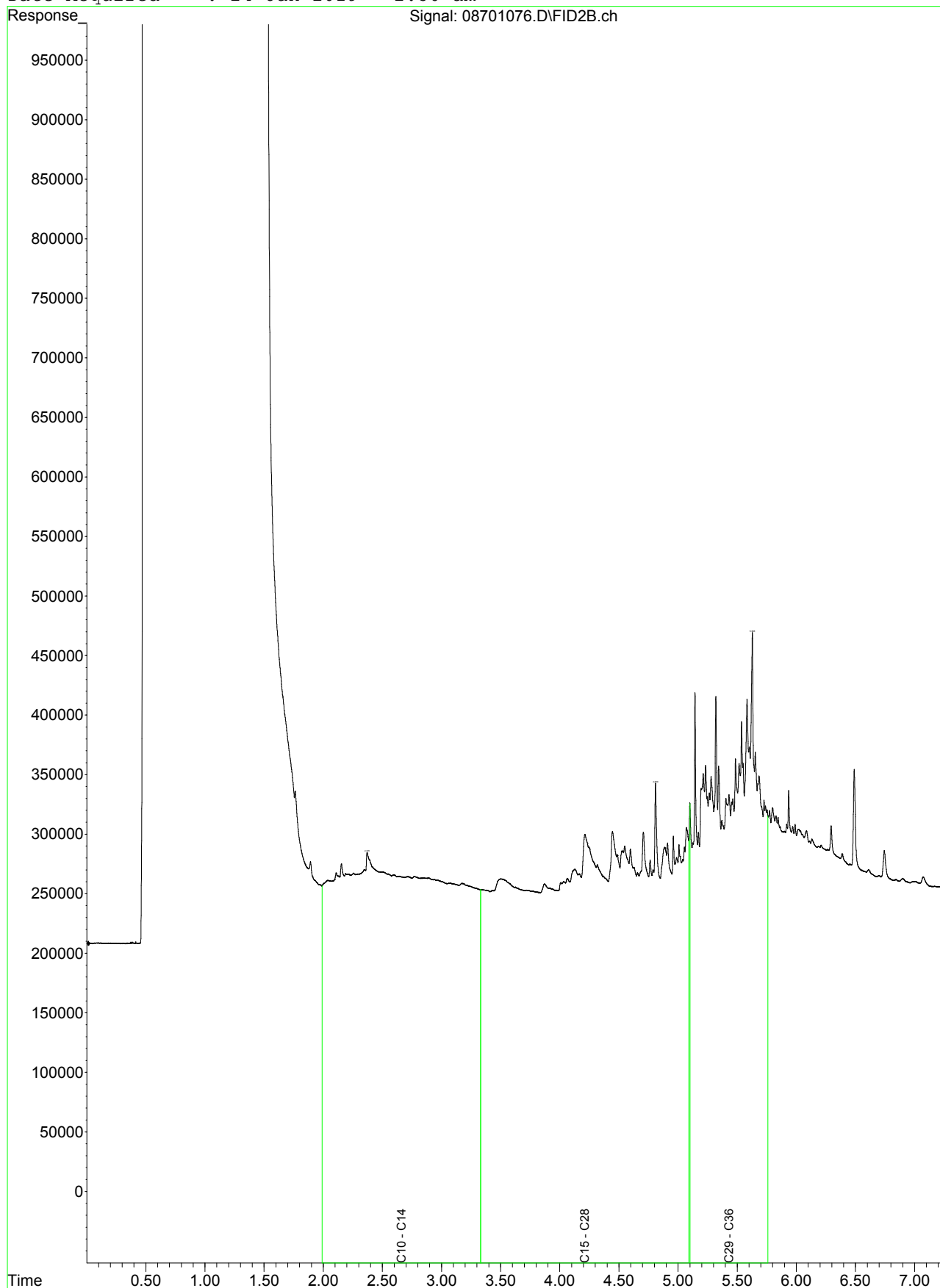
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Laboratory Number: EM1900682-013
Sample ID : CPT104_BH38_170119_0.2
Date Acquired : 24 Jan 2019 2:22 am



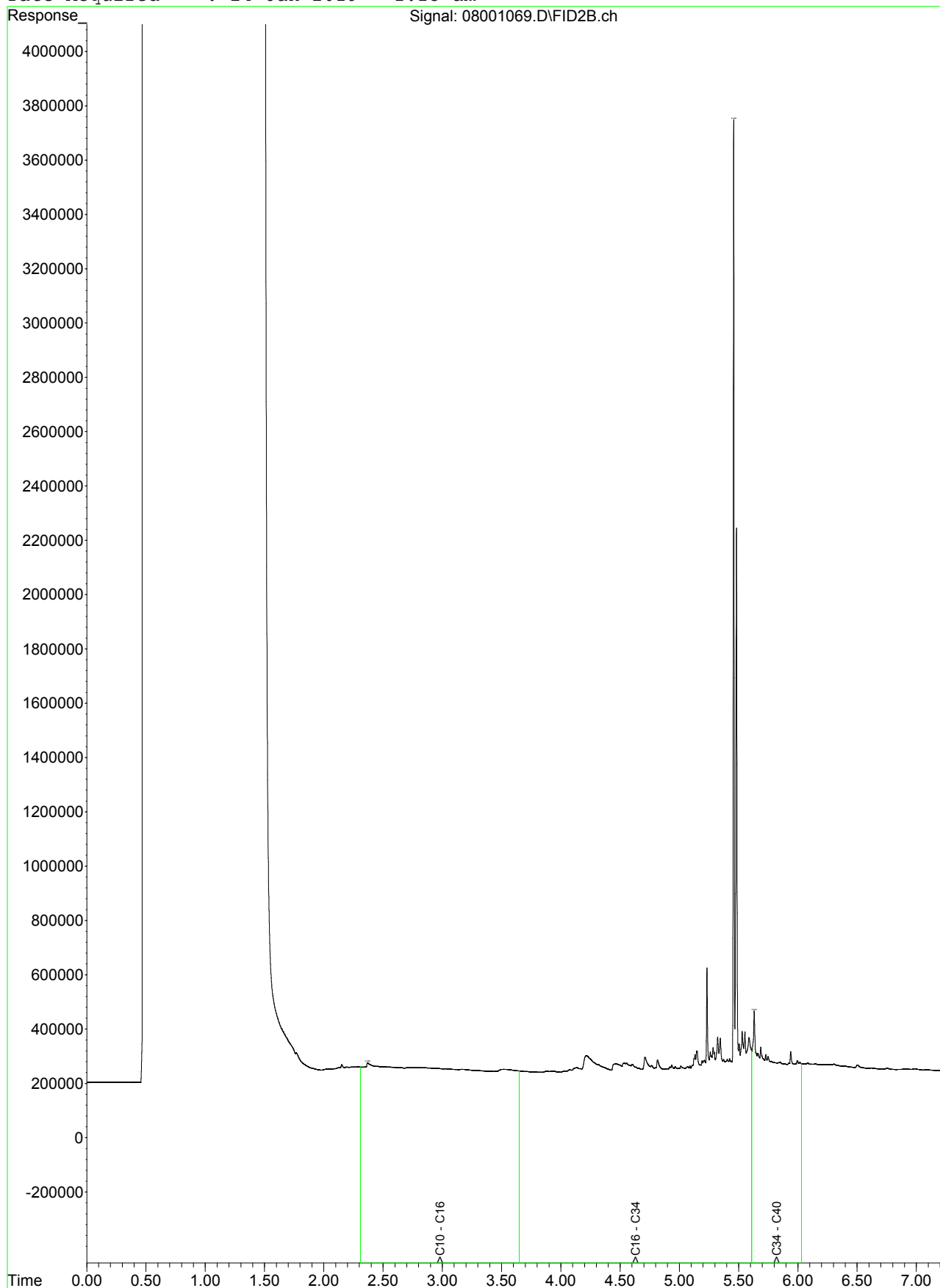
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Sample ID : CPT104_BH38_170119_0.5
Date Acquired : 24 Jan 2019 2:36 am



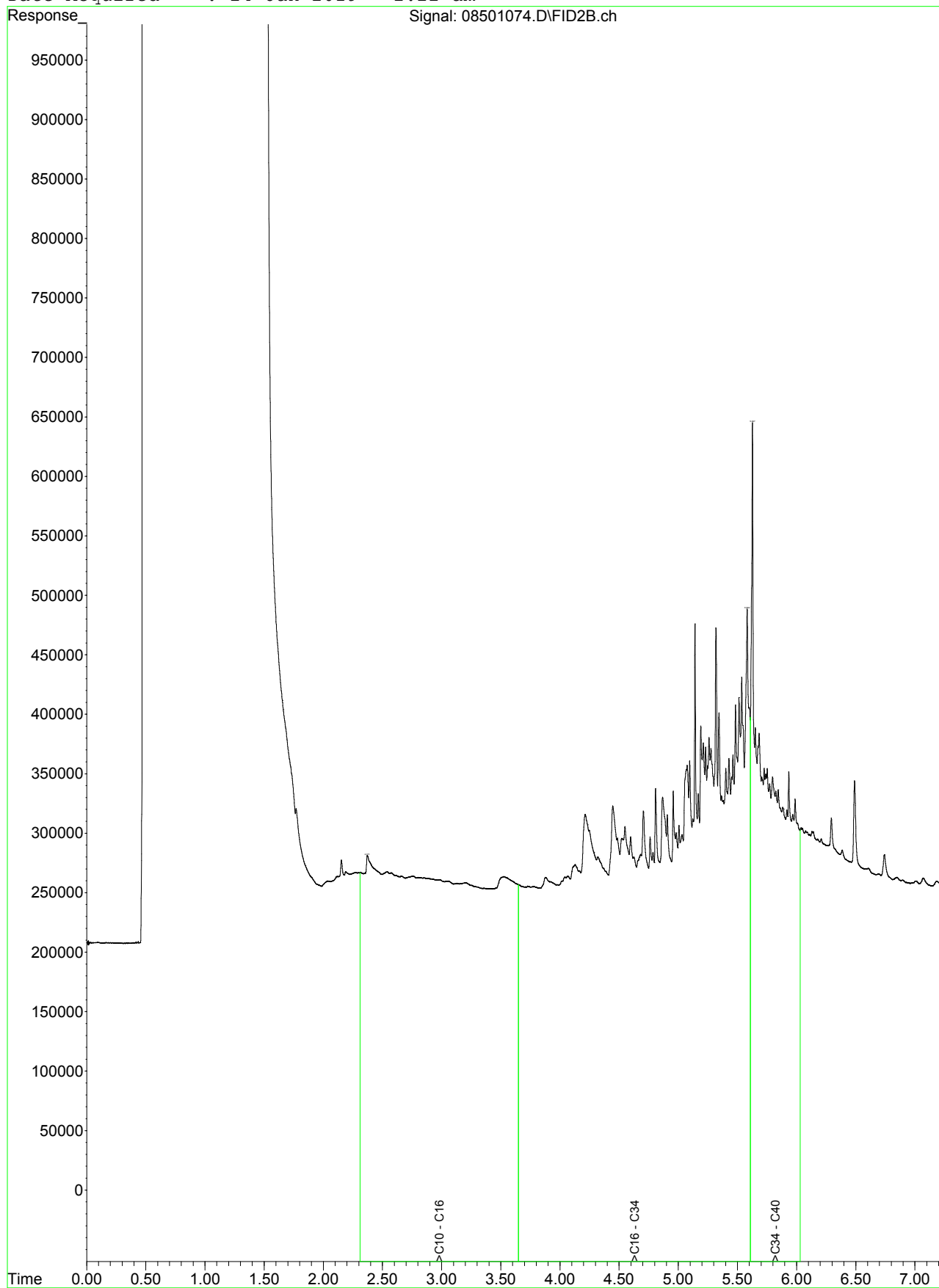
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Sample ID : CPT123_BH46_170119_0.2
Date Acquired : 24 Jan 2019 2:50 am



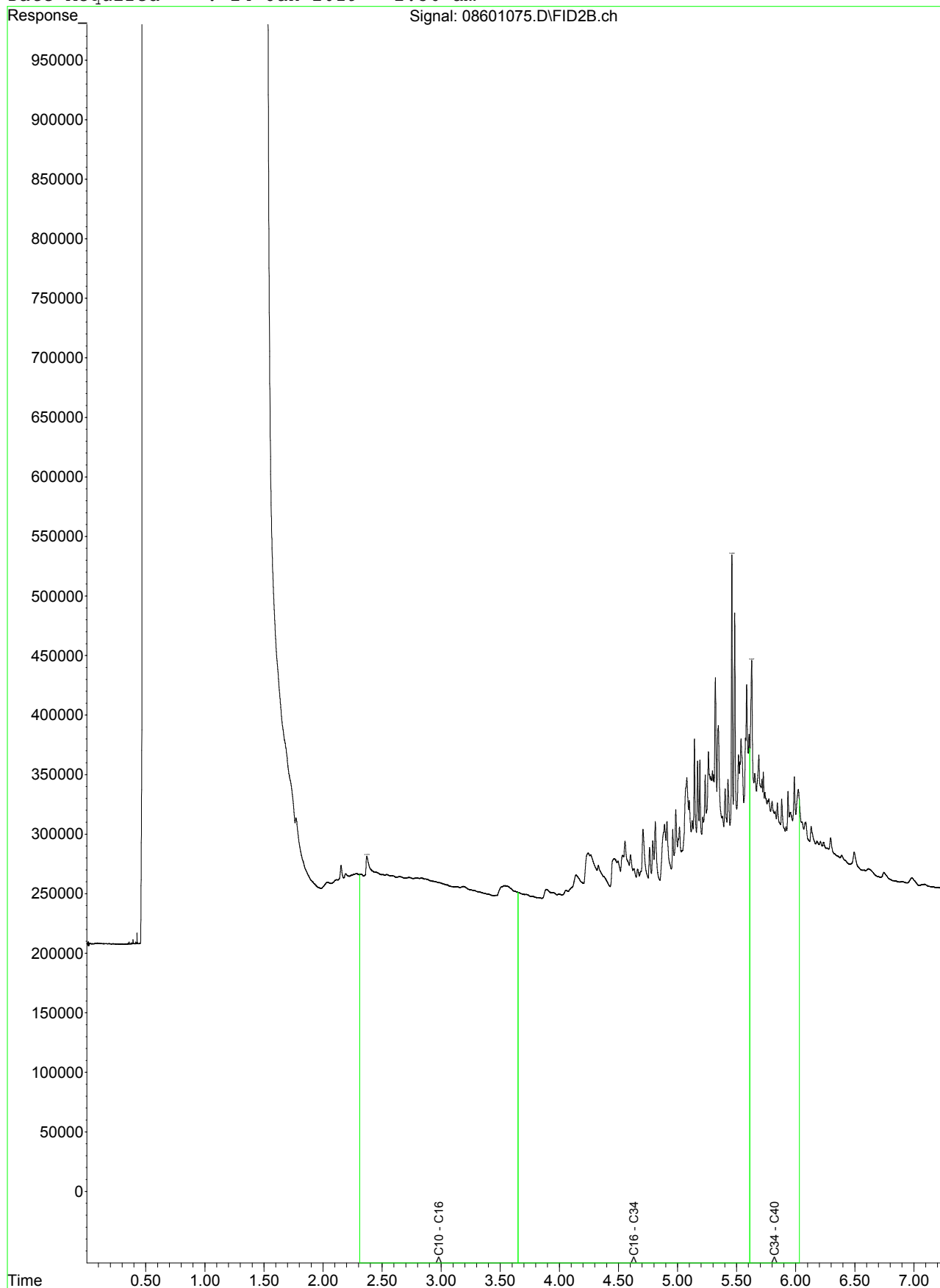
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Laboratory Number: EM1900682-001
Sample ID : CPT073_BH27_170119_0.2
Date Acquired : 24 Jan 2019 1:13 am



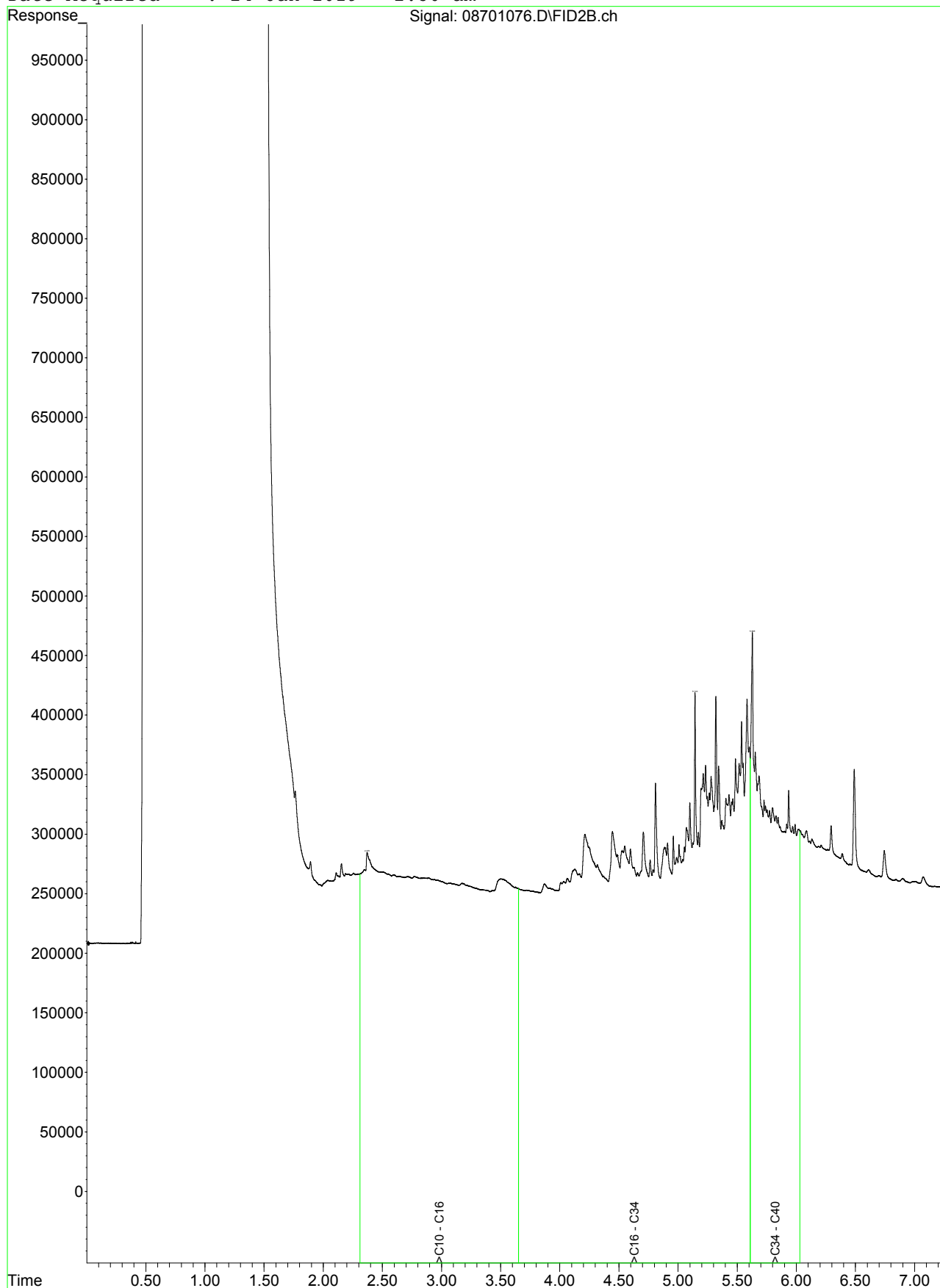
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Laboratory Number: EM1900682-013
Sample ID : CPT104_BH38_170119_0.2
Date Acquired : 24 Jan 2019 2:22 am



Fraction Scheme : NEPM Fractions
Data File : 08601075.D
Laboratory Number: EM1900682-014
Sample ID : CPT104_BH38_170119_0.5
Date Acquired : 24 Jan 2019 2:36 am



Fraction Scheme : NEPM Fractions
Data File : 08701076.D
Laboratory Number: EM1900682-019
Sample ID : CPT123_BH46_170119_0.2
Date Acquired : 24 Jan 2019 2:50 am



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900752

| | |
|--|---|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : GIJPP EES</p> <p>Sampler : [REDACTED]</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 4</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|--|---|

Dates

| | |
|---|--|
| <p>Date Samples Received : 21-Jan-2019 16:00</p> <p>Client Requested Due : 25-Jan-2019</p> <p>Date : </p> | <p>Issue Date : 22-Jan-2019</p> <p>Scheduled Reporting Date : 25-Jan-2019</p> |
|---|--|

Delivery Details

| | |
|---|---|
| <p>Mode of Delivery : Client Drop Off</p> <p>No. of coolers/boxes : 2</p> <p>Receipt Detail :</p> | <p>Security Seal : Intact.</p> <p>Temperature : 2.5°C - Ice present</p> <p>No. of samples received / analysed : 60 / 20</p> |
|---|---|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale & ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|--|---|
| TRH - Semivolatile Fraction : EP071 | | |
| CPT084_BH219_0.0 | - Snap Lock Bag - frozen on receipt at ALS | - Soil Glass Jar - Unpreserved |
| CPT084_BH219_0.5 | - Snap Lock Bag - frozen on receipt at ALS | - Soil Glass Jar - Unpreserved |
| CPT084_BH216_0.0 | - Snap Lock Bag - frozen on receipt at ALS | - Soil Glass Jar - Unpreserved |
| CPT084_BH216_0.5 | - Snap Lock Bag - frozen on receipt at ALS | - Soil Glass Jar - Unpreserved |
| TRH Volatiles/BTEX : EP080 | | |
| CPT084_BH219_0.0 | - Snap Lock Bag - frozen on receipt at ALS | - Soil Glass Jar - Unpreserved |
| CPT084_BH219_0.5 | - Snap Lock Bag - frozen on receipt at ALS | - Soil Glass Jar - Unpreserved |
| CPT084_BH216_0.0 | - Snap Lock Bag - frozen on receipt at ALS | - Soil Glass Jar - Unpreserved |
| CPT084_BH216_0.5 | - Snap Lock Bag - frozen on receipt at ALS | - Soil Glass Jar - Unpreserved |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - S-04
TRH/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------|--|--------------------------------------|--------------------------|
| EM1900752-001 | 21-Jan-2019 00:00 | CPT084_BH219_0.0 | | | □ | □ | □ |
| EM1900752-002 | 21-Jan-2019 00:00 | CPT084_BH219_0.5 | | | | □ | □ |
| EM1900752-003 | 21-Jan-2019 00:00 | CPT084_BH219_1.0 | | | □ | | |
| EM1900752-004 | 21-Jan-2019 00:00 | CPT084_BH219_1.5 | □ | | | | |
| EM1900752-005 | 21-Jan-2019 00:00 | CPT084_BH219_2.0 | □ | | | | |
| EM1900752-006 | 21-Jan-2019 00:00 | CPT084_BH219_2.5 | □ | | | | |
| EM1900752-007 | 21-Jan-2019 00:00 | CPT084_BH216_0.0 | | | □ | □ | □ |
| EM1900752-008 | 21-Jan-2019 00:00 | CPT084_BH216_0.5 | | | | □ | □ |
| EM1900752-009 | 21-Jan-2019 00:00 | CPT084_BH216_1.0 | □ | | | | |
| EM1900752-010 | 21-Jan-2019 00:00 | CPT084_BH216_1.5 | | | □ | | |
| EM1900752-011 | 21-Jan-2019 00:00 | CPT084_BH216_2.0 | □ | | | | |
| EM1900752-012 | 21-Jan-2019 00:00 | CPT084_BH216_2.5 | □ | | | | |
| EM1900752-013 | 21-Jan-2019 00:00 | CPT084_BH212_0.0 | □ | | | | |
| EM1900752-014 | 21-Jan-2019 00:00 | CPT084_BH212_0.5 | | | □ | | |
| EM1900752-015 | 21-Jan-2019 00:00 | CPT084_BH212_1.0 | □ | | | | |
| EM1900752-016 | 21-Jan-2019 00:00 | CPT084_BH212_1.5 | □ | | | | |
| EM1900752-017 | 21-Jan-2019 00:00 | CPT084_BH212_2.0 | | | □ | | |
| EM1900752-018 | 21-Jan-2019 00:00 | CPT084_BH212_2.5 | □ | | | | |
| EM1900752-019 | 21-Jan-2019 00:00 | CPT084_BH214_0.0 | □ | | | | |
| EM1900752-020 | 21-Jan-2019 00:00 | CPT084_BH214_0.5 | | | □ | | |



| | | | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - S-04
TRH/BTEXN |
|---------------|-------------------|-------------------|---|------------------------|--|--------------------------------------|--------------------------|
| EM1900752-021 | 21-Jan-2019 00:00 | CPT084_BH214_1.0 | ☐ | | | | |
| EM1900752-022 | 21-Jan-2019 00:00 | CPT084_BH214_1.5 | | | ☐ | | |
| EM1900752-023 | 21-Jan-2019 00:00 | CPT084_BH214_2.0 | ☐ | | | | |
| EM1900752-024 | 21-Jan-2019 00:00 | CPT084_BH214_2.5 | ☐ | | | | |
| EM1900752-025 | 21-Jan-2019 00:00 | CPT084_BH211_0.0 | ☐ | | | | |
| EM1900752-026 | 21-Jan-2019 00:00 | CPT084_BH211_0.5 | ☐ | | | | |
| EM1900752-027 | 21-Jan-2019 00:00 | CPT084_BH211_1.0 | | | ☐ | | |
| EM1900752-028 | 21-Jan-2019 00:00 | CPT084_BH211_1.5 | ☐ | | | | |
| EM1900752-029 | 21-Jan-2019 00:00 | CPT084_BH211_2.0 | | | ☐ | | |
| EM1900752-030 | 21-Jan-2019 00:00 | CPT084_BH211_2.5 | ☐ | | | | |
| EM1900752-031 | 21-Jan-2019 00:00 | CPT084_BH208_0.0 | ☐ | | | | |
| EM1900752-032 | 21-Jan-2019 00:00 | CPT084_BH208_0.5 | | | ☐ | | |
| EM1900752-033 | 21-Jan-2019 00:00 | CPT084_BH208_1.0 | ☐ | | | | |
| EM1900752-034 | 21-Jan-2019 00:00 | CPT084_BH208_1.5 | | | ☐ | | |
| EM1900752-035 | 21-Jan-2019 00:00 | CPT084_BH208_2.0 | ☐ | | | | |
| EM1900752-036 | 21-Jan-2019 00:00 | CPT084_BH208_2.5 | ☐ | | | | |
| EM1900752-037 | 21-Jan-2019 00:00 | CPT084_BH206_0.0 | ☐ | | | | |
| EM1900752-038 | 21-Jan-2019 00:00 | CPT084_BH206_0.5 | | | ☐ | | |
| EM1900752-039 | 21-Jan-2019 00:00 | CPT084_BH206_1.0 | ☐ | | | | |
| EM1900752-040 | 21-Jan-2019 00:00 | CPT084_BH206_1.5 | | | ☐ | | |
| EM1900752-041 | 21-Jan-2019 00:00 | CPT084_BH206_2.0 | ☐ | | | | |
| EM1900752-042 | 21-Jan-2019 00:00 | CPT084_BH206_2.5 | ☐ | | | | |
| EM1900752-043 | 21-Jan-2019 00:00 | CPT084_BH205_0.0 | ☐ | | | | |
| EM1900752-044 | 21-Jan-2019 00:00 | CPT084_BH205_0.5 | | ☐ | | | |
| EM1900752-045 | 21-Jan-2019 00:00 | CPT084_BH205_1.0 | ☐ | | | | |
| EM1900752-046 | 21-Jan-2019 00:00 | CPT084_BH205_1.5 | | ☐ | | | |
| EM1900752-047 | 21-Jan-2019 00:00 | CPT084_BH205_2.0 | ☐ | | | | |
| EM1900752-048 | 21-Jan-2019 00:00 | CPT084_BH205_2.5 | ☐ | | | | |
| EM1900752-049 | 21-Jan-2019 00:00 | CPT084_BH213A_0.0 | ☐ | | | | |
| EM1900752-050 | 21-Jan-2019 00:00 | CPT084_BH213A_0.5 | ☐ | | | | |
| EM1900752-051 | 21-Jan-2019 00:00 | CPT084_BH213A_1.0 | ☐ | | | | |
| EM1900752-052 | 21-Jan-2019 00:00 | CPT084_BH213A_1.5 | ☐ | | | | |
| EM1900752-053 | 21-Jan-2019 00:00 | CPT084_BH213A_2.0 | ☐ | | | | |
| EM1900752-054 | 21-Jan-2019 00:00 | CPT084_BH213A_2.5 | ☐ | | | | |
| EM1900752-055 | 21-Jan-2019 00:00 | CPT084_BH210_0.0 | ☐ | | | | |
| EM1900752-056 | 21-Jan-2019 00:00 | CPT084_BH210_0.5 | | | ☐ | | |
| EM1900752-057 | 21-Jan-2019 00:00 | CPT084_BH210_1.0 | ☐ | | | | |
| EM1900752-058 | 21-Jan-2019 00:00 | CPT084_BH210_1.5 | | | ☐ | | |
| EM1900752-059 | 21-Jan-2019 00:00 | CPT084_BH210_2.0 | ☐ | | | | |
| EM1900752-060 | 21-Jan-2019 00:00 | CPT084_BH210_2.5 | ☐ | | | | |



Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

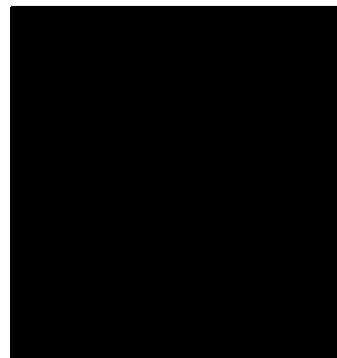
ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

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ANZ FQM - Generic Chain of Custody Form

| | | | | | | | |
|---|--------------------|---|---------|--|-------------|---|--|
| CONSULTANT: AECOM | | ADDRESS/OFFICE: | | SAMPLER: POPPY | | Destination Laboratory | |
| PROJECT MANAGER (PM): [REDACTED] | | SITE: Gas Import Jetty Pipeline Project (GUPT) EES | | MOBILE: [REDACTED] | | ALS | |
| PROJECT NUMBER & TASK CODE: 60512634 | | P.O. NO.: | | EMAIL: [REDACTED] | | PHONE: [REDACTED] | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: | | HOLD | | Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | |
| ORDER SEQUENCE (e.g. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000) | | CONTAINER INFORMATION | | RECEIVED BY | | METHOD OF SHIPMENT | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| | CPT084-BH214-0.5 S | S | 21/1/11 | | IX A-S-S | 1 | |
| | CPT084-BH214-1.0 S | S | | | | | |
| | CPT084-BH214-1.5 S | S | | | | | |
| | CPT084-BH214-2.0 S | S | | | | | |
| | CPT084-BH214-2.5 S | S | | | | | |
| | CPT084-BH211-0.0 S | S | | 12:10 | | | |
| | CPT084-BH211-0.5 S | S | | 12:15 | | | |
| | CPT084-BH211-1.0 S | S | | 12:30 | | | |
| | CPT084-BH211-1.5 S | S | | 12:40 | | | |
| | CPT084-BH211-2.0 S | S | | 12:50 | | | |
| | CPT084-BH211-2.5 S | S | | 12:55 | | | |
| | CPT084-BH208-0.5 | | | | | | |
| | CPT084-BH208-1.0 | | | | | | |
| | CPT084-BH208-1.5 | | | | | | |
| | CPT084-BH208-2.0 | | | | | | |
| | CPT084-BH208-2.5 | | | | | | |
| | CPT084-BH207-0 | | | | | | |
| | CPT084-BH207-0.5 | | | | | | |

COC Page 2 of 4

ANZ

FQM - Generic Chain of Custody Form

| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: Ben Carter | | Destination Laboratory | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------------|---|---------|--|-------------|--------------------------|--|--------|-----------|--------|------|------|-------------|---------------|--|-------------------|--|---------|--|------|---|--|------------------|--|--|--|--|--|--|------------------|--|--|--|--|--|--|------------------|--|--|--|--|--|--|----------------|--|--|--|--|--|--|------------------|--|--|--|--|--|--|------------------|--|--|--|--|--|--|------------------|--|--|--|--|--|--|------------------|--|--|--|--|--|--|------------------|--|--|--|--|--|--|----------------|--|--|--|--|--|--|------------------|--|--|--|--|--|--|------------------|--|--|--|--|--|--|------------------|--|--|--|--|--|--|------------------|--|--|--|--|--|--|------------------|--|--|--|--|--|
| PROJECT MANAGER (PM): [Redacted] | | SITE: Gas Import Jetty Pipeline Project (GUPP) EES | | MOBILE: [Redacted] | | PHONE: [Redacted] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT NUMBER & TASK CODE: 605622811 60592634 | | P.O. NO.: | | EMAIL REPORT TO: [Redacted] | | ALIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
FOR LABORATORY USE ONLY:
COOLER SEAL (with description): No
Initial: Yes
SAMPLE TEMPERATURE: Yes
CHILLED: Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water)
<table border="1"> <thead> <tr> <th>ALS ID</th> <th>SAMPLE ID</th> <th>MATRIX</th> <th>DATE</th> <th>Time</th> <th>Type / Code</th> <th>Total bottles</th> </tr> </thead> <tbody> <tr> <td></td> <td>CP1084-BH207-10.5</td> <td></td> <td>24/1/19</td> <td></td> <td>Bagg</td> <td>1</td> </tr> <tr> <td></td> <td>CP1084-BH207-1.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH207-2.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH207-2.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH206-0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH206-0.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH206-1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH206-1.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH206-2.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH206-2.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH205-0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH205-0.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH205-1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH205-1.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH205-2.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH205-2.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | | | | | | | | ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | | CP1084-BH207-10.5 | | 24/1/19 | | Bagg | 1 | | CP1084-BH207-1.5 | | | | | | | CP1084-BH207-2.0 | | | | | | | CP1084-BH207-2.5 | | | | | | | CP1084-BH206-0 | | | | | | | CP1084-BH206-0.5 | | | | | | | CP1084-BH206-1.0 | | | | | | | CP1084-BH206-1.5 | | | | | | | CP1084-BH206-2.0 | | | | | | | CP1084-BH206-2.5 | | | | | | | CP1084-BH205-0 | | | | | | | CP1084-BH205-0.5 | | | | | | | CP1084-BH205-1.0 | | | | | | | CP1084-BH205-1.5 | | | | | | | CP1084-BH205-2.0 | | | | | | | CP1084-BH205-2.5 | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH207-10.5 | | 24/1/19 | | Bagg | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH207-1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | CP1084-BH207-2.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | CP1084-BH205-1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH205-2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH205-2.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONTAINER INFORMATION
<table border="1"> <thead> <tr> <th>ALS ID</th> <th>SAMPLE ID</th> <th>MATRIX</th> <th>DATE</th> <th>Time</th> <th>Type / Code</th> <th>Total bottles</th> </tr> </thead> <tbody> <tr> <td></td> <td>CP1084-BH207-10.5</td> <td></td> <td>24/1/19</td> <td></td> <td>Bagg</td> <td>1</td> </tr> <tr> <td></td> <td>CP1084-BH207-1.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH207-2.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH207-2.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH206-0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH206-0.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH206-1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH206-1.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH206-2.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH206-2.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH205-0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH205-0.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH205-1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH205-1.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH205-2.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>CP1084-BH205-2.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | | | | | | | | ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | | CP1084-BH207-10.5 | | 24/1/19 | | Bagg | 1 | | CP1084-BH207-1.5 | | | | | | | CP1084-BH207-2.0 | | | | | | | CP1084-BH207-2.5 | | | | | | | CP1084-BH206-0 | | | | | | | CP1084-BH206-0.5 | | | | | | | CP1084-BH206-1.0 | | | | | | | CP1084-BH206-1.5 | | | | | | | CP1084-BH206-2.0 | | | | | | | CP1084-BH206-2.5 | | | | | | | CP1084-BH205-0 | | | | | | | CP1084-BH205-0.5 | | | | | | | CP1084-BH205-1.0 | | | | | | | CP1084-BH205-1.5 | | | | | | | CP1084-BH205-2.0 | | | | | | | CP1084-BH205-2.5 | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH207-10.5 | | 24/1/19 | | Bagg | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH207-1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH207-2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH207-2.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH206-0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH206-0.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH206-1.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH206-1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH206-2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH206-2.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH205-0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH205-0.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH205-1.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH205-1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH205-2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CP1084-BH205-2.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

RECEIVED BY: **Ben Carter**
 Date: **24/1/19**
 Time: **4:30**

RECEIVED BY: **Ben Carter**
 Date: **24/1/19**
 Time: **4:30**

RECEIVED BY: **Ben Carter**
 Date: **24/1/19**
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 Date: **24/1/19**
 Time: **4:30**

RECEIVED BY: **Ben Carter**
 Date: **24/1/19**
 Time: **4:30**

COC Page 3 of 3

ANZ
FQM - Generic Chain of Custody Form

| CONSULTANT: | | ADDRESS / OFFICE: | | SAMPLER: | | Destination Laboratory | |
|--|-------------------|--|---------|------------------|-------------|---|--|
| PROJECT MANAGER (PM): | | SITE: | | MOBILE: | | PHONE: | |
| PROJECT NUMBER & TASK CODE | | P.O. NO.: | | EMAIL REPORT TO: | | ANALYSIS REQUIRED (note - suite codes must be listed to attract suite prices) | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | |
| COOLER SEAT (if applicable) | | COOLER SEAT (if applicable) | | | | | |
| TEMPERATURE | | TEMPERATURE | | | | | |
| CHILLED: Yes | | CHILLED: Yes | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| | CPT084-BH213A-0.5 | S | 21/1/19 | | Bag(A.S.S.) | 1 | |
| | CPT084-BH213A-0.5 | S | | | | | |
| | CPT084-BH213A-0.0 | S | | | | | |
| | CPT084-BH213A-1.5 | S | | | | | |
| | CPT084-BH213A-2.0 | S | | | | | |
| | CPT084-BH213A-2.5 | S | | | | | |
| | CPT084-BH210-0.0 | S | | | | | |
| | CPT084-BH210-0.5 | S | | | | | |
| | CPT084-BH210-1.0 | S | | | | | |
| | CPT084-BH210-1.5 | S | | | | | |
| | CPT084-BH210-2.0 | S | | | | | |
| | CPT084-BH210-2.5 | S | | | | | |

Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc.

RECEIVED BY: Name: Date: Time: Of: Cor' Note No: Transport Co:

METHOD OF SHIPMENT

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cu Preserved; S = Sodium Hydroxide/Cu Preserved; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag

Soil Container Codes: Jar = Unpreserved glass jar

COC Page 4 of 4

ANZ

FQM - Borehole Monitoring Bore Field Log

Q4AN(EV)-101-FM1

| | | | | | | | | | | | |
|-------------------|--|---|--|------------------|--|-------------|--|-----------------|--|---------------|--|
| Project Name: | | GIJPP EES | | Project Number: | | 60582811 | | Borehole No.: | | CPT084-BH213A | |
| Project Location: | | Between Crib Point and Pakenham, Victoria | | Client: | | APA Group | | Date Commenced: | | 21/1/19 | |
| PM Name: | | [REDACTED] | | Date Completed: | | 21/1/19 | | Sheet | | 1 of 1 | |
| Bore Location: | | BH213 | | Fieldwork Staff: | | SM/B/PH | | | | | |
| Drill Contractor: | | QUEST | | Drill Model: | | Hole Angle: | | deg. | | Bore Size: | |
| Drilling Fluid: | | Orientation: | | deg. | | Co-ords: | | deg. | | RL: | |
| | | | | | | | | | | Permit No.: | |

| Material Description | | | | Field Notes | | | | Well Construction | | | | | |
|----------------------|--------|-------------|-------|---|----------|-------------------------|-----------|-------------------|---|-------|--------|--------|--------|
| Method | Casing | Penetration | Depth | Type, colour/mottling, plasticity/particle size, secondary/minor components, soil origin | Moisture | Consistency/Rel Density | PID (ppm) | Sampling | Odour, staining, groundwater observations/ regime, additional information | Depth | Anulus | Casing | Anulus |
| HAND AUGER | | | 0.1 | CLAY, black, high plasticity, trace root, trace fine to med grain sand, trace organics,

Becoming dark grey with brown mottling | DS+16.2 | | | | CPT084-BH213A-0.0 | | | | |
| | | | 0.5 | | DS+0.6 | | | | CPT084-BH213A-0.5 | | | | |
| | | | 1.0 | | DS+0.8 | | | | CPT084-BH213A-1.0 | | | | |
| | | | 1.5 | | DS+0.9 | | | | CPT084-BH213A-1.5 | | | | |
| | | | 2.0 | | DS+0.5 | | | | CPT084-BH213A-2.0 | | | | |
| | | 2.5 | | DS+0.3 | | | | CPT084-BH213A-2.5 | | | | | |
| | | | | E.O.H @ 2.5m bgl. Target depth reached. | | | | | | | | | |

R/L [Signature]
21/1/19 C4 w/p

FQM - Generic Chain of Custody Form

| | | | | | | |
|--|-------------------|--|---------|-----------------------|------------------------|--|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: POPPY | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: | | MOBILE: | PHONE: | |
| PROJECT NUMBER & TASK CODE: 60592635 | | P.O. NO.: | | EMAIL REPORT TO: | | ANALYSIS REQUIRED Including SUITES (note - suite codes must be listed to attract suite prices) |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | |
| COOPER (N/A) (code 00000000) | | | | | | |
| N/A | | | | | | |
| N/A | | | | | | |
| N/A | | | | | | |
| SAMPLE TEMPERATURE | | | | | | |
| CHILLED: Yes | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles |
| 1 | CP10084-BH219-0.0 | S | 21/1/19 | 8:30 | 14 A.S.S | 1 |
| 2 | CP10084-BH219-0.5 | S | | 8:45 | | |
| 3 | CP10084-BH219-1.0 | S | | 8:50 | | |
| 4 | CP10084-BH219-1.5 | S | | 8:55 | | |
| 5 | CP10084-BH219-2.0 | S | | 9:00 | | |
| 6 | CP10084-BH219-2.5 | S | | 9:05 | | |
| 7 | CP10084-BH219-3.0 | S | | 9:10 | | |
| 8 | CP10084-BH219-3.5 | S | | 9:15 | | |
| 9 | CP10084-BH219-4.0 | S | | 9:20 | | |
| 10 | CP10084-BH219-4.5 | S | | 9:25 | | |
| 11 | CP10084-BH219-5.0 | S | | 9:30 | | |
| 12 | CP10084-BH219-5.5 | S | | 9:35 | | |
| 13 | CP10084-BH219-6.0 | S | | 9:40 | | |
| 14 | CP10084-BH219-6.5 | S | | 9:45 | | |
| 15 | CP10084-BH219-7.0 | S | | 9:50 | | |
| 16 | CP10084-BH219-7.5 | S | | 9:55 | | |
| 17 | CP10084-BH219-8.0 | S | | 10:00 | | |
| 18 | CP10084-BH219-8.5 | S | | 10:05 | | |
| 19 | CP10084-BH219-9.0 | S | | 10:10 | | |

URGENT

Environmental Division
 Melbourne
 Work Order Reference
EM1900752

Telephone : 61-3-8549 9600

Notes: e.g. Highly contaminated samples
 e.g. "High PAHs expected".
 Extra volume for QC or trace LORs etc.

HOLD
 A.S.S to be frozen

RECEIVED BY: **Ben Chung**
 Date: **21/1/19**
 Time: **4:01**

METHOD OF SHIPMENT
 Con' Note No:
 Transport Co:

RECEIVED BY: **POPPY**
 Date: **21/1/19**
 Time: **10:10**

RELINQUISHED BY: **AECOM**
 Date: **21/1/19**
 Time: **10:10**

Name: **POPPY**
 Of: **AECOM**

Name: **Ben Chung**
 Of: **Enviro**

Name: **POPPY**
 Of: **AECOM**

Name: **Ben Chung**
 Of: **Enviro**

Name: **POPPY**
 Of: **AECOM**

Name: **Ben Chung**
 Of: **Enviro**

Name: **POPPY**
 Of: **AECOM**

Name: **Ben Chung**
 Of: **Enviro**

Name: **POPPY**
 Of: **AECOM**

Name: **Ben Chung**
 Of: **Enviro**

Name: **POPPY**
 Of: **AECOM**

Name: **Ben Chung**
 Of: **Enviro**

Name: **POPPY**
 Of: **AECOM**

COC Page) of ~~4~~

ANZ FQM - Generic Chain of Custody Form

| | | | | | | | |
|---|------------------|---|---------|--|-------------|---|----------------------|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: POPPY | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GUPT) EES | | MOBILE: | | PHONE: | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | FALS | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY:
GROSSER SEAL (with appropriate)
Batch: Yes No
SAMPLE TEMPERATURE
CHILLED: Yes No | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | |
| SAMPLE INFORMATION (code: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 20 | CP1084-BH214-0.5 | S | 21/1/11 | | 1 X A.S.S | 1 | ✓ A.S.S to be frozen |
| 21 | CP1084-BH214-1.0 | S | | | | | ✓ |
| 22 | CP1084-BH214-1.5 | S | | | | | ✓ |
| 23 | CP1084-BH214-2.0 | S | | | | | ✓ |
| 24 | CP1084-BH214-2.5 | S | | | | | ✓ |
| 25 | CP1084-BH211-0.0 | S | | 12:10 | | | ✓ |
| 26 | CP1084-BH211-0.5 | S | | 12:15 | | | ✓ |
| 27 | CP1084-BH211-1.0 | S | | 12:30 | | | ✓ |
| 28 | CP1084-BH211-1.5 | S | | 12:45 | | | ✓ |
| 29 | CP1084-BH211-2.0 | S | | 12:50 | | | ✓ |
| 30 | CP1084-BH211-2.5 | S | | 12:55 | | | ✓ |
| 31 | CP1084-BH208-0 | | | | | | ✓ |
| 32 | CP1084-BH208-0.5 | | | | | | ✓ |
| 33 | CP1084-BH208-1.0 | | | | | | ✓ |
| 34 | CP1084-BH208-1.5 | | | | | | ✓ |
| 35 | CP1084-BH208-2.0 | | | | | | ✓ |
| 36 | CP1084-BH208-2.5 | | | | | | ✓ |
| 37 | CP1084-BH207-0 | | | | | | ✓ |
| 38 | CP1084-BH207-0.5 | | | | | | ✓ |

| | | | | | |
|--------------------|----------------------|----------------------|----------------------|--------------------|--|
| RELINQUISHED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
| Name: POPPY | Date: 21/1/11 | Name: Ba (Mn) | Date: 21/1/11 | Cont' Note No: | |
| Of: ABEOM | Time: | Of: | Time: 4:21 | Transport Co: | |

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved Plastic; VS = VOA Vial Sulfuric Preserved; V = VOA Vial HCl Preserved; YB = VOA Vial Sodium Bisulfate Preserved; YS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SQ = Sulfuric Preserved Amber Glass; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag

Soil Container Codes: Jar = Unpreserved glass jar

COC Page 2 of 4

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

| | | | | | | | |
|--|-------------------|--|--|--|--------|------------------------|------|
| CONSULTANT: ALCON | | ADDRESS / OFFICE: | | SAMPLER: | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GUJPP) EES | | MOBILE: | | ALS | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
FOR LABORATORY USE ONLY:
COOLERS (S/N, DATE, VOLUME):
() Yes () No
SAMPLE TEMPERATURE:
CHILLED: () Yes () No | | | | CONTAINER INFORMATION | | | |
| | | | | SAMPLE ID | MATRIX | DATE | Time |
| ALS ID | | | | | | | |
| 37 | CP1084-BH207.10.5 | 21/1/19 | | Bag | 1 | | |
| 38 | CP1084-BH207.1.5 | | | | | | |
| 39 | CP1084-BH207.2.0 | | | | | | |
| 40 | CP1084-BH207.2.5 | | | | | | |
| 41 | CP1084-BH206.0 | | | | | | |
| 42 | CP1084-BH206.0.5 | | | | | | |
| 43 | CP1084-BH206.1.0 | | | | | | |
| 44 | CP1084-BH206.1.5 | | | | | | |
| 45 | CP1084-BH206.2.0 | | | | | | |
| 46 | CP1084-BH206.2.5 | | | | | | |
| 47 | CP1084-BH205.0 | | | | | | |
| 48 | CP1084-BH205.0.5 | | | | | | |
| 49 | CP1084-BH205.1.0 | | | | | | |
| 50 | CP1084-BH205.1.5 | | | | | | |
| 51 | CP1084-BH205.2.0 | | | | | | |
| 52 | CP1084-BH205.2.5 | | | | | | |
| Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | | | | | | | |

COC Page 3 of 31

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

| | | | | | | | |
|--|------------------|--|----------|---|--------------|------------------------|--|
| CONSULTANT: | | ADDRESS / OFFICE: | | SAMPLER: | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: | | MOBILE: | | ALS | |
| PROJECT NUMBER & TASK CODE: | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY: | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | |
| COOLER SEAL (check both sides) | | | | | | | |
| IMPROVED | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W=Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | TIME | Type / Code | Total bottles | |
| U9 | CP1004-BH23A-0.0 | S | 21/1/19 | | Bag (A.S.S.) | 1 | |
| S0 | CP1004-BH23A-0.5 | S | | | | | |
| S1 | CP1004-BH23A-1.0 | S | | | | | |
| S2 | CP1004-BH23A-1.5 | S | | | | | |
| S3 | CP1004-BH23A-2.0 | S | | | | | |
| S4 | CP1004-BH23A-2.5 | S | | | | | |
| S5 | CP1004-BH210-0.0 | S | | | | | |
| S6 | CP1004-BH210-0.5 | S | | | | | |
| S7 | CP1004-BH210-1.0 | S | | | | | |
| S8 | CP1004-BH210-1.5 | S | | | | | |
| S9 | CP1004-BH210-2.0 | S | | | | | |
| S0 | CP1004-BH210-2.5 | S | | | | | |
| RECEIVED BY: | | RELINQUISHED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
| Name: | poppy | Name: | poppy | Name: | poppy | Con't Note No: | |
| Or: | WZLOM | Or: | WZLOM | Or: | WZLOM | Transport Co: | |
| Date: | 21/01/19 | Date: | 21/01/19 | Date: | 21/01/19 | | |
| Time: | | Time: | | Time: | | | |

COC Page 4 of 4

From: [REDACTED]@aecom.com>
Sent: Tuesday, 22 January 2019 1:39 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: On Hold - EM1900752 - AECOMAU (60592634)

ALY
LAL
12

Hi [REDACTED]

I was just looking at the borelogs for the samples and realised that we've high PID readings for the following. Any chance you could extract the samples and analyse for TRHC6-C40 and BTEX?

- 7 • CPT084_BH216_210119_0.0
- 8 • CPT084_BH216_210119_0.5
- 1 • CPT084_BH219_210119_0.0
- 2 • CPT084_BH219_210119_0.6

Please find below analysis for ASS:

- 114 1. CPT084_BH205_210119_0.5 = SPOCAS (EA029)
- 116 2. CPT084_BH205_210119_1.5 = SPOCAS (EA029)
- 38 3. CPT084_BH206_210119_0.5 = Chromium Suite (EA033)
- 110 4. CPT084_BH206_210119_1.5 = Chromium Suite (EA033)
- N-n 5. CPT084_BH207_210119_0.5 = Chromium Suite (EA033)
- N-n 6. CPT084_BH207_210119_1.5 = Chromium Suite (EA033)
- 32 7. CPT084_BH208_210119_0.5 = Chromium Suite (EA033)
- 34 8. CPT084_BH208_210119_1.5 = Chromium Suite (EA033)
- 56 9. CPT084_BH210_210119_0.5 = Chromium Suite (EA033)
- 58 10. CPT084_BH210_210119_1.5 = Chromium Suite (EA033)
- 21 11. CPT084_BH211_210119_1.0 = Chromium Suite (EA033)
- 22 12. CPT084_BH211_210119_2.0 = Chromium Suite (EA033)
- 14 13. CPT084_BH212_210119_0.5 = Chromium Suite (EA033)
- 17 14. CPT084_BH212_210119_2.0 = Chromium Suite (EA033)
- 20 15. CPT084_BH214_210119_0.5 = Chromium Suite (EA033)
- 22 16. CPT084_BH214_210119_1.5 = Chromium Suite (EA033)
- 7 17. CPT084_BH216_210119_0.0 = Chromium Suite (EA033)
- 10 18. CPT084_BH216_210119_1.5 = Chromium Suite (EA033)
- 1 19. CPT084_BH219_210119_0.0 = Chromium Suite (EA033)
- 3 20. CPT084_BH219_210119_1.0 = Chromium Suite (EA033)

At 3 days TAT. Thanks!

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

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aecom.com

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CERTIFICATE OF ANALYSIS

Work Order : **EM1900752**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP EES
Quote number : EN/096/18
No. of samples received : 60
No. of samples analysed : 20

Page : 1 of 9
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 21-Jan-2019 16:00
Date Analysis Commenced : 22-Jan-2019
Issue Date : 29-Jan-2019 09:20



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|----------------------------------|---|
| [REDACTED] | 2IC Organic Chemist | Brisbane Organics, Stafford, QLD |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Inorganics, Stafford, QLD |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

∅ = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO_3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO_3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m³ in-situ soil, multiply reported results x wet bulk density of soil in t/m³.



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT084_BH219_0.0 | CPT084_BH219_0.5 | CPT084_BH219_1.0 | CPT084_BH216_0.0 | CPT084_BH216_0.5 |
|--|-------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900752-001 | EM1900752-002 | EM1900752-003 | EM1900752-007 | EM1900752-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.2 | ---- | 6.6 | 4.7 | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 18 | ---- | <2 | 36 | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.03 | ---- | <0.02 | 0.06 | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.009 | ---- | <0.005 | 0.009 | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | <10 | <10 | ---- | ---- |
| EA033-C: Acid Neutralising Capacity | | | | | | | | | |
| Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | ---- | ---- | 0.90 | ---- | ---- | ---- |
| acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | ---- | ---- | 180 | ---- | ---- | ---- |
| sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | ---- | ---- | 0.29 | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | ---- | 1.5 | 1.5 | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.04 | ---- | <0.02 | 0.06 | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 24 | ---- | <10 | 41 | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | 2 | ---- | <1 | 3 | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.04 | ---- | <0.02 | 0.06 | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 24 | ---- | <10 | 41 | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 2 | ---- | <1 | 3 | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 22.9 | 24.4 | ---- | 44.5 | 25.8 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | ---- | <10 | <10 | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | ---- | <50 | <50 | <50 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | ---- | <100 | <100 | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | 200 | <100 | ---- | <100 | <100 | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | 200 | <50 | ---- | <50 | <50 | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | ---- | <10 | <10 | <10 |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | ---- | <10 | <10 | <10 |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | ---- | <50 | <50 | <50 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT084_BH219_0.0 | CPT084_BH219_0.5 | CPT084_BH219_1.0 | CPT084_BH216_0.0 | CPT084_BH216_0.5 |
|--|-------------------|-----|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900752-001 | EM1900752-002 | EM1900752-003 | EM1900752-007 | EM1900752-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued | | | | | | | | | |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | 200 | <100 | ---- | <100 | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | 100 | <100 | ---- | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | 300 | <50 | ---- | <50 | <50 |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | <50 | ---- | <50 | <50 |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | 2.1 | <0.5 | ---- | 0.6 | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | 1.2 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Sum of BTEX | ---- | 0.2 | mg/kg | | 3.3 | <0.2 | ---- | 0.6 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | 3.3 | <0.5 | ---- | 0.6 | <0.5 |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.2 | % | | 106 | 74.0 | ---- | 90.4 | 69.0 |
| Toluene-D8 | 2037-26-5 | 0.2 | % | | 90.2 | 69.7 | ---- | 73.7 | 66.1 |
| 4-Bromofluorobenzene | 460-00-4 | 0.2 | % | | 103 | 75.2 | ---- | 85.6 | 74.7 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT084_BH216_1.5 | CPT084_BH212_0.5 | CPT084_BH212_2.0 | CPT084_BH214_0.5 | CPT084_BH214_1.5 |
|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900752-010 | EM1900752-014 | EM1900752-017 | EM1900752-020 | EM1900752-022 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | 5.4 | 5.7 | 5.8 | 5.5 | 5.3 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | 10 | 9 | 6 | 10 | 11 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | <0.005 | 0.006 | <0.005 | 0.007 | 0.007 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | <10 | <10 | <10 | <10 | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | <0.02 | 0.02 | <0.02 | 0.02 | 0.02 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | 10 | 13 | <10 | 14 | 15 |
| Liming Rate | ---- | 1 | kg CaCO3/t | | <1 | <1 | <1 | 1 | 1 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | <0.02 | 0.02 | <0.02 | 0.02 | 0.02 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | 10 | 13 | <10 | 14 | 15 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | <1 | <1 | <1 | 1 | 1 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT084_BH211_1.0 | CPT084_BH211_2.0 | CPT084_BH208_0.5 | CPT084_BH208_1.5 | CPT084_BH206_0.5 |
|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900752-027 | EM1900752-029 | EM1900752-032 | EM1900752-034 | EM1900752-038 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | 5.9 | 5.9 | 5.9 | 5.6 | 5.8 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | 4 | 3 | 4 | 6 | 5 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | 0.006 | <0.005 | 0.008 | 0.006 | 0.006 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | <10 | <10 | <10 | <10 | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | <10 | <10 | <10 | <10 | <10 |
| Liming Rate | ---- | 1 | kg CaCO3/t | | <1 | <1 | <1 | <1 | <1 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | <10 | <10 | <10 | <10 | <10 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | <1 | <1 | <1 | <1 | <1 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT084_BH206_1.5 | CPT084_BH205_0.5 | CPT084_BH205_1.5 | CPT084_BH210_0.5 | CPT084_BH210_1.5 |
|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900752-040 | EM1900752-044 | EM1900752-046 | EM1900752-056 | EM1900752-058 |
| | | | | | Result | Result | Result | Result | Result |
| EA029-A: pH Measurements | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 5.9 | 5.6 | ---- | ---- |
| pH OX (23B) | ---- | 0.1 | pH Unit | | ---- | 6.0 | 5.8 | ---- | ---- |
| EA029-B: Acidity Trail | | | | | | | | | |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | 3 | 5 | ---- | ---- |
| Titrateable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | | ---- | 5 | 6 | ---- | ---- |
| Titrateable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | | ---- | <2 | <2 | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.020 | % pyrite S | | ---- | <0.020 | <0.020 | ---- | ---- |
| sulfidic - Titrateable Peroxide Acidity (s-23G) | ---- | 0.020 | % pyrite S | | ---- | <0.020 | <0.020 | ---- | ---- |
| sulfidic - Titrateable Sulfidic Acidity (s-23H) | ---- | 0.020 | % pyrite S | | ---- | <0.020 | <0.020 | ---- | ---- |
| EA029-C: Sulfur Trail | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.020 | % S | | ---- | 0.024 | 0.025 | ---- | ---- |
| Peroxide Sulfur (23De) | ---- | 0.020 | % S | | ---- | 0.041 | 0.037 | ---- | ---- |
| Peroxide Oxidisable Sulfur (23E) | ---- | 0.020 | % S | | ---- | <0.020 | <0.020 | ---- | ---- |
| acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | | ---- | 10 | <10 | ---- | ---- |
| EA029-D: Calcium Values | | | | | | | | | |
| KCl Extractable Calcium (23Vh) | ---- | 0.020 | % Ca | | ---- | 0.380 | 0.390 | ---- | ---- |
| Peroxide Calcium (23Wh) | ---- | 0.020 | % Ca | | ---- | 0.412 | 0.398 | ---- | ---- |
| Acid Reacted Calcium (23X) | ---- | 0.020 | % Ca | | ---- | 0.032 | <0.020 | ---- | ---- |
| acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | | ---- | 16 | <10 | ---- | ---- |
| sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.020 | % S | | ---- | 0.025 | <0.020 | ---- | ---- |
| EA029-E: Magnesium Values | | | | | | | | | |
| KCl Extractable Magnesium (23Sm) | ---- | 0.020 | % Mg | | ---- | 0.331 | 0.372 | ---- | ---- |
| Peroxide Magnesium (23Tm) | ---- | 0.020 | % Mg | | ---- | 0.342 | 0.377 | ---- | ---- |
| Acid Reacted Magnesium (23U) | ---- | 0.020 | % Mg | | ---- | <0.020 | <0.020 | ---- | ---- |
| Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | ---- |
| sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.020 | % S | | ---- | <0.020 | <0.020 | ---- | ---- |
| EA029-H: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | 1.5 | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | 0.02 | 0.02 | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | 13 | 13 | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | <1 | <1 | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT084_BH206_1.5 | CPT084_BH205_0.5 | CPT084_BH205_1.5 | CPT084_BH210_0.5 | CPT084_BH210_1.5 |
|--|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 | 21-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900752-040 | EM1900752-044 | EM1900752-046 | EM1900752-056 | EM1900752-058 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA029-H: Acid Base Accounting - Continued | | | | | | | | | |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | 0.02 | 0.02 | 0.02 | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | 13 | 13 | 13 | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | <1 | <1 | <1 | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.6 | ---- | ---- | ---- | 5.8 | 5.3 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 6 | ---- | ---- | ---- | 7 | 14 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | <0.02 | 0.02 |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.005 | ---- | ---- | ---- | 0.009 | 0.006 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | <10 | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | ---- | ---- | ---- | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | 0.02 | 0.03 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | 12 | 17 |
| Liming Rate | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | <1 | 1 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | 0.02 | 0.03 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | 12 | 17 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | <1 | 1 |



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| | | | |
|--------------------------------|------------|-------------------------|-------|
| Sub-Matrix: SOIL | | □ □ □ □ □ □ □ □ □ □ s □ | |
| Compound | CAS Number | □ □ % | □ □ □ |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 53 | 134 |
| Toluene-D8 | 2037-26-5 | 60 | 131 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 127 |

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900752 | Page | : 1 of 9 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 21-Jan-2019 |
| Order number | : | Date Analysis Commenced | : 22-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 29-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : GIJPP EES | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 60 | | |
| No. of samples analysed | : 20 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□□□ □□ □□

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

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2IC Organic Chemist
Senior Inorganic Chemist
Senior Acid Sulfate Soil Chemist
Senior Acid Sulfate Soil Chemist
Senior Organic Chemist

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Brisbane Organics, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Brisbane Acid Sulphate Soils, Stafford, QLD
Brisbane Inorganics, Stafford, QLD
Melbourne Organics, Springvale, VIC



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA029-E: Magnesium Values (QC Lot: 2153474) - continued | | | | | | | | | |
| EM1900682-008 | Anonymous | EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-H: Acid Base Accounting (QC Lot: 2153474) | | | | | | | | | |
| EM1900682-008 | Anonymous | EA029: ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 0.00 | No Limit |
| | | EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA029: Liming Rate | ---- | 1 | kg CaCO3/t | <1 | <1 | 0.00 | No Limit |
| | | EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | <1 | 0.00 | No Limit |
| | | EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| | | EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA033-A: Actual Acidity (QC Lot: 2153476) | | | | | | | | | |
| EM1900695-008 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 8.8 | 8.8 | 0.00 | 0% - 20% |
| EM1900752-020 | CPT084_BH214_0.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 10 | 9 | 13.4 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 5.5 | 5.6 | 1.80 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2153476) | | | | | | | | | |
| EM1900695-008 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.006 | 0.007 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EM1900752-020 | CPT084_BH214_0.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.007 | 0.007 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA033-C: Acid Neutralising Capacity (QC Lot: 2153476) | | | | | | | | | |
| EM1900695-008 | Anonymous | EA033: Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | 1.22 | 1.09 | 11.5 | 0% - 20% |
| | | EA033: sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | 0.39 | 0.35 | 11.5 | 0% - 20% |
| | | EA033: acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | 245 | 218 | 11.5 | 0% - 20% |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2149082) | | | | | | | | | |
| EM1900752-002 | CPT084_BH219_0.5 | EA055: Moisture Content | ---- | 0.1 | % | 24.4 | 24.7 | 1.09 | 0% - 20% |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2150737) | | | | | | | | | |
| EB1901614-019 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 7.1 | 7.4 | 3.41 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|--------------------|----------------------------------|------------|-----------------------------------|-------|-----------------|------------------|----------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2150408) | | | | | | | | | |
| EM1900752-002 | CPT084_BH219_0.5 | EP080: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2150731) | | | | | | | | | |
| EB1901614-019 | Anonymous | EP080: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2150732) | | | | | | | | | |
| EB1901614-019 | Anonymous | EP071: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2151213) | | | | | | | | | |
| EM1900848-021 | Anonymous | EP071: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| | | EP071: C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2150408) | | | | | | | | | |
| EM1900752-002 | CPT084_BH219_0.5 | EP080: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2150731) | | | | | | | | | |
| EB1901614-019 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2150732) | | | | | | | | | |
| EB1901614-019 | Anonymous | EP071: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2151213) | | | | | | | | | |
| EM1900848-021 | Anonymous | EP071: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| | | EP071: >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2150408) | | | | | | | | | |
| EM1900752-002 | CPT084_BH219_0.5 | EP080: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | EP080: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit | |
| EP080: BTEXN (QC Lot: 2150731) | | | | | | | | | |
| EB1901614-019 | Anonymous | EP080: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080: BTEXN (QC Lot: 2150731) - continued | | | | | | | | | |
| EB1901614-019 | Anonymous | EP080: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA029-A: pH Measurements (QCLot: 2153474) | | | | | | | | |
| EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA029: pH OX (23B) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 101 | 70 | 130 |
| EA029-B: Acidity Trail (QCLot: 2153474) | | | | | | | | |
| EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 86.9 | 70 | 130 |
| EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | <2 | 29.1 mole H+ / t | 87.6 | 70 | 130 |
| EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | <2 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-C: Sulfur Trail (QCLot: 2153474) | | | | | | | | |
| EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | 0.052 % S | 93.2 | 70 | 130 |
| EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | <0.020 | 0.145 % S | 94.7 | 70 | 130 |
| EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029-D: Calcium Values (QCLot: 2153474) | | | | | | | | |
| EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | <0.020 | 0.151 % Ca | 116 | 70 | 130 |
| EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | <0.020 | 0.296 % Ca | 97.8 | 70 | 130 |
| EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-E: Magnesium Values (QCLot: 2153474) | | | | | | | | |
| EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | <0.020 | 0.176 % Mg | 106 | 70 | 130 |
| EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | <0.020 | 0.175 % Mg | 103 | 70 | 130 |
| EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | ---- | ---- | ---- | ---- |
| EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting (QCLot: 2153474) | | | | | | | | |
| EA029: ANC Fineness Factor | ---- | 0.5 | - | <0.5 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-------|-------------|-----------------------------|---------------------------------------|---------------------------|--------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
LowHigh | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA033-A: Actual Acidity (QCLot: 2153476) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 89.1 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2153476) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 94.5 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-C: Acid Neutralising Capacity (QCLot: 2153476) | | | | | | | | |
| EA033: Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | <0.01 | 10 % CaCO3 | 106 | 70 | 130 |
| EA033: acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033: sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | <0.01 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2150408) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 36 mg/kg | 70.4 | 61 | 127 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2150731) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 16 mg/kg | 117 | 72 | 120 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2150732) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 310 mg/kg | 102 | 79 | 123 |
| EP071: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 490 mg/kg | 107 | 77 | 123 |
| EP071: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2151213) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 110 | 72 | 122 |
| EP071: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 120 | 84 | 123 |
| EP071: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 110 | 79 | 119 |
| EP071: C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2150408) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 45 mg/kg | 69.9 | 60 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2150731) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 18.5 mg/kg | 117 | 70 | 119 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2150732) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 450 mg/kg | 104 | 81 | 122 |
| EP071: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 320 mg/kg | 107 | 74 | 122 |
| EP071: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2151213) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 115 | 77 | 121 |
| EP071: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 116 | 83 | 121 |
| EP071: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 113 | 65 | 123 |
| EP071: >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- |
| EP080: BTEXN (QCLot: 2150408) | | | | | | | | |

Matrix Spike (MS) Report

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2150408) | | | | | | | |
| EM1900752-008 | CPT084_BH216_0.5 | EP080: C6 - C9 Fraction | ---- | 28 mg/kg | 63.7 | 42 | 131 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2150731) | | | | | | | |
| EB1901614-020 | Anonymous | EP080: C6 - C9 Fraction | ---- | 8 mg/kg | 107 | 70 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2150732) | | | | | | | |
| EB1901614-020 | Anonymous | EP071: C10 - C14 Fraction | ---- | 310 mg/kg | 109 | 70 | 130 |
| | | EP071: C15 - C28 Fraction | ---- | 490 mg/kg | 115 | 70 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2151213) | | | | | | | |
| EM1900752-002 | CPT084_BH219_0.5 | EP071: C10 - C14 Fraction | ---- | 806 mg/kg | 108 | 53 | 123 |
| | | EP071: C15 - C28 Fraction | ---- | 3006 mg/kg | 118 | 70 | 124 |
| | | EP071: C29 - C36 Fraction | ---- | 1584 mg/kg | 107 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2150408) | | | | | | | |
| EM1900752-008 | CPT084_BH216_0.5 | EP080: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 62.3 | 39 | 129 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2150731) | | | | | | | |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|----------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2150731) - continued | | | | | | | |
| EB1901614-020 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 8 mg/kg | 107 | 70 | 130 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2150732) | | | | | | | |
| EB1901614-020 | Anonymous | EP071: >C10 - C16 Fraction | ---- | 450 mg/kg | 108 | 70 | 130 |
| | | EP071: >C16 - C34 Fraction | ---- | 320 mg/kg | 130 | 70 | 130 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2151213) | | | | | | | |
| EM1900752-002 | CPT084_BH219_0.5 | EP071: >C10 - C16 Fraction | ---- | 1160 mg/kg | 112 | 65 | 123 |
| | | EP071: >C16 - C34 Fraction | ---- | 3978 mg/kg | 114 | 67 | 121 |
| | | EP071: >C34 - C40 Fraction | ---- | 313 mg/kg | 111 | 44 | 126 |
| EP080: BTEXN (QCLot: 2150408) | | | | | | | |
| EM1900752-008 | CPT084_BH216_0.5 | EP080: Benzene | 71-43-2 | 2 mg/kg | 79.1 | 50 | 136 |
| | | EP080: Toluene | 108-88-3 | 2 mg/kg | 82.9 | 56 | 139 |
| EP080: BTEXN (QCLot: 2150731) | | | | | | | |
| EB1901614-020 | Anonymous | EP080: Benzene | 71-43-2 | 2 mg/kg | 97.8 | 70 | 130 |
| | | EP080: Toluene | 108-88-3 | 2 mg/kg | 90.9 | 70 | 130 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1900752**

Page : 1 of 6

Client : **AECOM Australia Pty Ltd**
Contact : **[REDACTED]**
Project : 60592634
Site : GIJPP EES
Sampler : **[REDACTED]**
Order number :

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 21-Jan-2019
Issue Date : 29-Jan-2019
No. of samples received : 60
No. of samples analysed : 20

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|--|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA029-A: pH Measurements | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH205_0.5, CPT084_BH205_1.5 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✔ | 25-Jan-2019 | 25-Apr-2019 | ✔ | |
| EA029-B: Acidity Trail | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH205_0.5, CPT084_BH205_1.5 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✔ | 25-Jan-2019 | 25-Apr-2019 | ✔ | |
| EA029-C: Sulfur Trail | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH205_0.5, CPT084_BH205_1.5 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✔ | 25-Jan-2019 | 25-Apr-2019 | ✔ | |
| EA029-D: Calcium Values | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH205_0.5, CPT084_BH205_1.5 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✔ | 25-Jan-2019 | 25-Apr-2019 | ✔ | |
| EA029-E: Magnesium Values | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH205_0.5, CPT084_BH205_1.5 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✔ | 25-Jan-2019 | 25-Apr-2019 | ✔ | |
| EA029-F: Excess Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH205_0.5, CPT084_BH205_1.5 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✔ | 25-Jan-2019 | 25-Apr-2019 | ✔ | |
| EA029-G: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH205_0.5, CPT084_BH205_1.5 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✔ | 25-Jan-2019 | 25-Apr-2019 | ✔ | |
| EA029-H: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH205_0.5, CPT084_BH205_1.5 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✔ | 25-Jan-2019 | 25-Apr-2019 | ✔ | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 21-Jan-2019 | 25-Jan-2019 | 21-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| CPT084_BH219_0.0, | CPT084_BH219_1.0, | | | | | | | |
| CPT084_BH216_0.0, | CPT084_BH216_1.5, | | | | | | | |
| CPT084_BH212_0.5, | CPT084_BH212_2.0, | | | | | | | |
| CPT084_BH214_0.5, | CPT084_BH214_1.5, | | | | | | | |
| CPT084_BH211_1.0, | CPT084_BH211_2.0, | | | | | | | |
| CPT084_BH208_0.5, | CPT084_BH208_1.5, | | | | | | | |
| CPT084_BH206_0.5, | CPT084_BH206_1.5, | | | | | | | |
| CPT084_BH210_0.5, | CPT084_BH210_1.5 | | | | | | | |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 21-Jan-2019 | 25-Jan-2019 | 21-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| CPT084_BH219_0.0, | CPT084_BH219_1.0, | | | | | | | |
| CPT084_BH216_0.0, | CPT084_BH216_1.5, | | | | | | | |
| CPT084_BH212_0.5, | CPT084_BH212_2.0, | | | | | | | |
| CPT084_BH214_0.5, | CPT084_BH214_1.5, | | | | | | | |
| CPT084_BH211_1.0, | CPT084_BH211_2.0, | | | | | | | |
| CPT084_BH208_0.5, | CPT084_BH208_1.5, | | | | | | | |
| CPT084_BH206_0.5, | CPT084_BH206_1.5, | | | | | | | |
| CPT084_BH210_0.5, | CPT084_BH210_1.5 | | | | | | | |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 21-Jan-2019 | 25-Jan-2019 | 21-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| CPT084_BH219_0.0, | CPT084_BH219_1.0, | | | | | | | |
| CPT084_BH216_0.0, | CPT084_BH216_1.5, | | | | | | | |
| CPT084_BH212_0.5, | CPT084_BH212_2.0, | | | | | | | |
| CPT084_BH214_0.5, | CPT084_BH214_1.5, | | | | | | | |
| CPT084_BH211_1.0, | CPT084_BH211_2.0, | | | | | | | |
| CPT084_BH208_0.5, | CPT084_BH208_1.5, | | | | | | | |
| CPT084_BH206_0.5, | CPT084_BH206_1.5, | | | | | | | |
| CPT084_BH210_0.5, | CPT084_BH210_1.5 | | | | | | | |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 21-Jan-2019 | 25-Jan-2019 | 21-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| CPT084_BH219_0.0, | CPT084_BH219_1.0, | | | | | | | |
| CPT084_BH216_0.0, | CPT084_BH216_1.5, | | | | | | | |
| CPT084_BH212_0.5, | CPT084_BH212_2.0, | | | | | | | |
| CPT084_BH214_0.5, | CPT084_BH214_1.5, | | | | | | | |
| CPT084_BH211_1.0, | CPT084_BH211_2.0, | | | | | | | |
| CPT084_BH208_0.5, | CPT084_BH208_1.5, | | | | | | | |
| CPT084_BH206_0.5, | CPT084_BH206_1.5, | | | | | | | |
| CPT084_BH210_0.5, | CPT084_BH210_1.5 | | | | | | | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 21-Jan-2019 | 25-Jan-2019 | 21-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| CPT084_BH219_0.0, | CPT084_BH219_1.0, | | | | | | | |
| CPT084_BH216_0.0, | CPT084_BH216_1.5, | | | | | | | |
| CPT084_BH212_0.5, | CPT084_BH212_2.0, | | | | | | | |
| CPT084_BH214_0.5, | CPT084_BH214_1.5, | | | | | | | |
| CPT084_BH211_1.0, | CPT084_BH211_2.0, | | | | | | | |
| CPT084_BH208_0.5, | CPT084_BH208_1.5, | | | | | | | |
| CPT084_BH206_0.5, | CPT084_BH206_1.5, | | | | | | | |
| CPT084_BH210_0.5, | CPT084_BH210_1.5 | | | | | | | |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA055) | | 21-Jan-2019 | ---- | ---- | ---- | 22-Jan-2019 | 20-Jul-2019 | ✓ |
| CPT084_BH219_0.5, | CPT084_BH216_0.5 | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA055) | | 21-Jan-2019 | ---- | ---- | ---- | 23-Jan-2019 | 20-Jul-2019 | ✓ |
| CPT084_BH219_0.0, | CPT084_BH216_0.0 | | | | | | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EP080) | | 21-Jan-2019 | 23-Jan-2019 | 04-Feb-2019 | ✓ | 23-Jan-2019 | 04-Feb-2019 | ✓ |
| CPT084_BH219_0.0, | CPT084_BH219_0.5, | | | | | | | |
| CPT084_BH216_0.0, | CPT084_BH216_0.5 | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EP080) | | 21-Jan-2019 | 23-Jan-2019 | 04-Feb-2019 | ✓ | 24-Jan-2019 | 04-Feb-2019 | ✓ |
| CPT084_BH219_0.0, | CPT084_BH216_0.0 | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EP071) | | 21-Jan-2019 | 24-Jan-2019 | 04-Feb-2019 | ✓ | 24-Jan-2019 | 05-Mar-2019 | ✓ |
| CPT084_BH219_0.5, | CPT084_BH216_0.5 | | | | | | | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EP080) | | 21-Jan-2019 | 23-Jan-2019 | 04-Feb-2019 | ✓ | 23-Jan-2019 | 04-Feb-2019 | ✓ |
| CPT084_BH219_0.0, | CPT084_BH219_0.5, | | | | | | | |
| CPT084_BH216_0.0, | CPT084_BH216_0.5 | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EP080) | | 21-Jan-2019 | 23-Jan-2019 | 04-Feb-2019 | ✓ | 24-Jan-2019 | 04-Feb-2019 | ✓ |
| CPT084_BH219_0.0, | CPT084_BH216_0.0 | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EP071) | | 21-Jan-2019 | 24-Jan-2019 | 04-Feb-2019 | ✓ | 24-Jan-2019 | 05-Mar-2019 | ✓ |
| CPT084_BH219_0.5, | CPT084_BH216_0.5 | | | | | | | |
| EP080: BTEXN | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EP080) | | 21-Jan-2019 | 23-Jan-2019 | 04-Feb-2019 | ✓ | 23-Jan-2019 | 04-Feb-2019 | ✓ |
| CPT084_BH219_0.5, | CPT084_BH216_0.5 | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EP080) | | 21-Jan-2019 | 23-Jan-2019 | 04-Feb-2019 | ✓ | 24-Jan-2019 | 04-Feb-2019 | ✓ |
| CPT084_BH219_0.0, | CPT084_BH216_0.0 | | | | | | | |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | Quality Control Specification | |
|---|--------|-------|---------|----------|----------|-------------------------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | | Evaluation |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 1 | 4 | 25.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 6 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 5 | 20.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 4 | 25.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| TRH - Semivolatile Fraction | EP071 | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

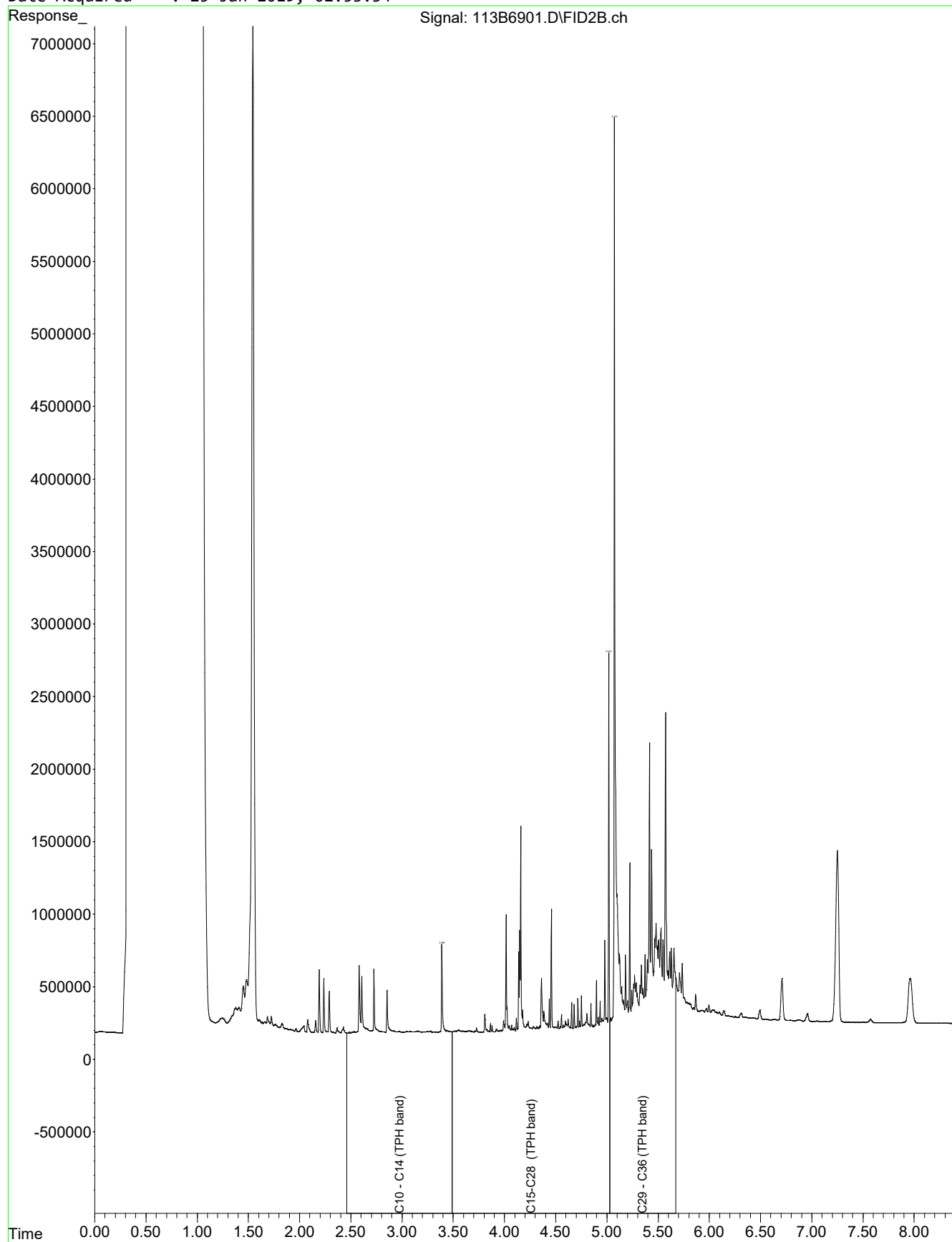


Brief Method Summaries

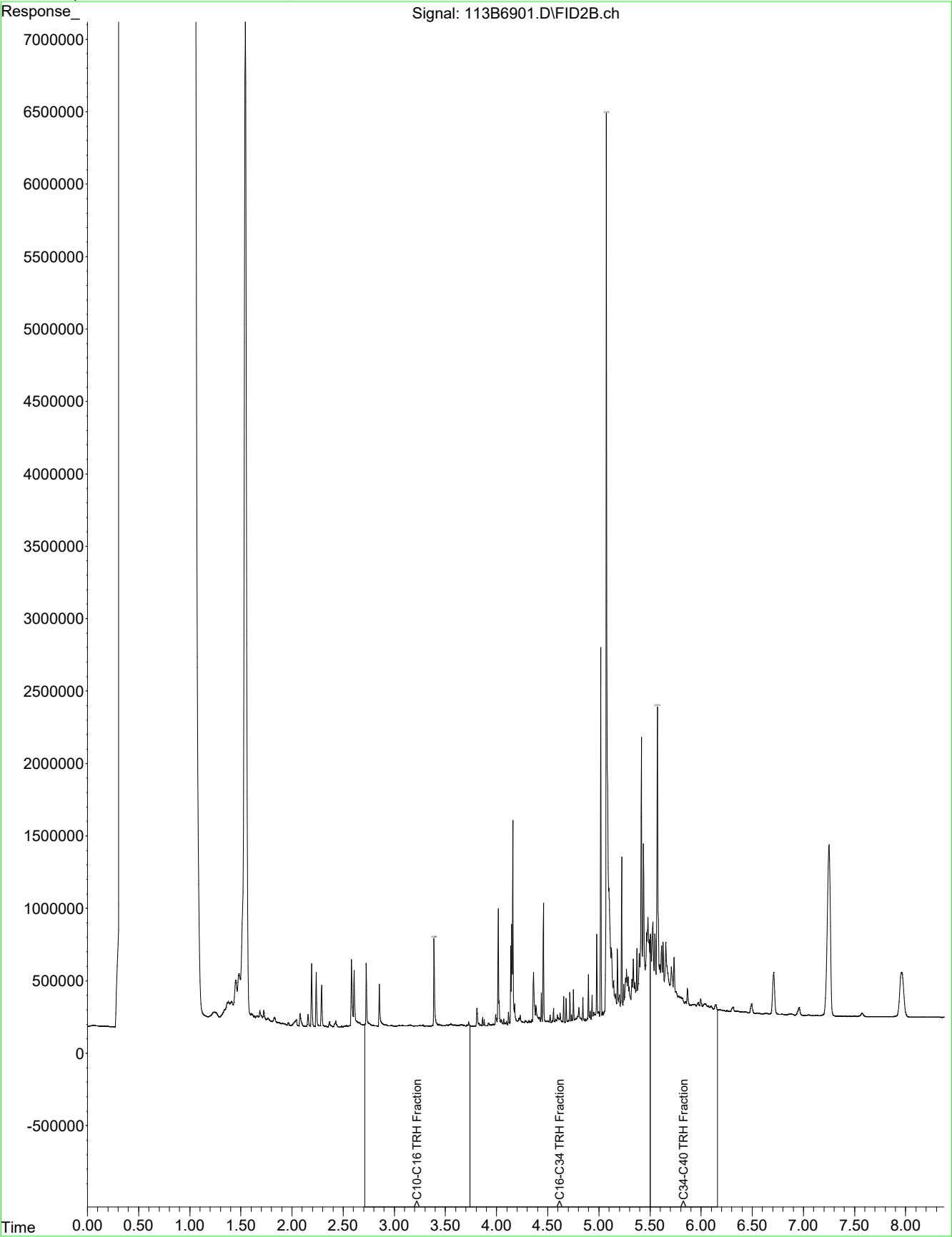
The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|---------|--------|---|
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | SOIL | In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| TRH - Semivolatile Fraction | EP071 | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013. |
| TRH Volatiles/BTEX | EP080 | SOIL | In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013. |
| Preparation Methods | Method | Matrix | Method Descriptions |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Methanolic Extraction of Soils for Purge and Trap | ORG16 | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids | ORG17 | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |

Fraction Scheme : Legacy Fractions
Data File : 113B6901.D
Laboratory Number: EM1900752-001
Sample ID : CPT084_BH219_0.0
Date Acquired : 25-Jan-2019, 02:53:34



Fraction Scheme : NEPM Fractions
Data File : 113B6901.D
Laboratory Number: EM1900752-001
Sample ID : CPT084_BH219_0.0
Date Acquired : 25-Jan-2019, 02:53:34



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900753

| | |
|--|--|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : Gas Import Jetty Pipeline</p> <p>Sampler : SM</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : Peter Ravlic</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : peter.ravlic@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 3</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|--|--|

Dates

| | |
|---|--|
| <p>Date Samples Received : 21-Jan-2019 16:00</p> <p>Client Requested Due Date : 25-Jan-2019</p> | <p>Issue Date : 23-Jan-2019</p> <p>Scheduled Reporting Date : 25-Jan-2019</p> |
|---|--|

Delivery Details

| | |
|--|--|
| <p>Mode of Delivery : Client Drop Off</p> <p>No. of coolers/boxes : 2</p> <p>Receipt Detail :</p> | <p>Security Seal : Intact.</p> <p>Temperature : 4.2°C - Ice present</p> <p>No. of samples received / analysed : 36 / 12</p> |
|--|--|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

□ **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM1900753-002 : 21-Jan-2019 08:45 : CPT084_BH218_210119_0.5
EM1900753-005 : 21-Jan-2019 09:00 : CPT084_BH218_210119_2.0
EM1900753-008 : 21-Jan-2019 09:30 : CPT084_BH217_210119_0.5
EM1900753-010 : 21-Jan-2019 09:40 : CPT084_BH217_210119_1.5
EM1900753-014 : 21-Jan-2019 10:15 : CPT084_BH215_210119_0.5
EM1900753-016 : 21-Jan-2019 10:25 : CPT084_BH215_210119_1.5
EM1900753-021 : 21-Jan-2019 11:00 : CPT084_BH213_210119_1.0
EM1900753-023 : 21-Jan-2019 11:15 : CPT084_BH213_210119_2.0
EM1900753-026 : 21-Jan-2019 12:55 : CPT084_BH207_210119_0.5
EM1900753-028 : 21-Jan-2019 13:05 : CPT084_BH207_210119_1.5
EM1900753-032 : 21-Jan-2019 13:55 : CPT084_BH209_210119_0.5
EM1900753-035 : 21-Jan-2019 14:10 : CPT084_BH209_210119_2.0

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils |
|----------------------|-----------------------------|-------------------------|---|------------------------|--|
| EM1900753-001 | 21-Jan-2019 08:40 | CPT084_BH218_210119_... | □ | | |
| EM1900753-002 | 21-Jan-2019 08:45 | CPT084_BH218_210119_... | | | □ |
| EM1900753-003 | 21-Jan-2019 08:50 | CPT084_BH218_210119_... | □ | | |
| EM1900753-004 | 21-Jan-2019 08:55 | CPT084_BH218_210119_... | □ | | |
| EM1900753-005 | 21-Jan-2019 09:00 | CPT084_BH218_210119_... | | | □ |
| EM1900753-006 | 21-Jan-2019 09:05 | CPT084_BH218_210119_... | □ | | |
| EM1900753-007 | 21-Jan-2019 09:25 | CPT084_BH217_210119_... | □ | | |
| EM1900753-008 | 21-Jan-2019 09:30 | CPT084_BH217_210119_... | | | □ |
| EM1900753-009 | 21-Jan-2019 09:35 | CPT084_BH217_210119_... | □ | | |
| EM1900753-010 | 21-Jan-2019 09:40 | CPT084_BH217_210119_... | | | □ |
| EM1900753-011 | 21-Jan-2019 09:45 | CPT084_BH217_210119_... | □ | | |
| EM1900753-012 | 21-Jan-2019 09:50 | CPT084_BH217_210119_... | □ | | |
| EM1900753-013 | 21-Jan-2019 10:10 | CPT084_BH215_210119_... | □ | | |
| EM1900753-014 | 21-Jan-2019 10:15 | CPT084_BH215_210119_... | | | □ |
| EM1900753-015 | 21-Jan-2019 10:20 | CPT084_BH215_210119_... | □ | | |
| EM1900753-016 | 21-Jan-2019 10:25 | CPT084_BH215_210119_... | | | □ |
| EM1900753-017 | 21-Jan-2019 10:30 | CPT084_BH215_210119_... | □ | | |
| EM1900753-018 | 21-Jan-2019 10:35 | CPT084_BH215_210119_... | □ | | |
| EM1900753-019 | 21-Jan-2019 10:50 | CPT084_BH213_210119_... | □ | | |
| EM1900753-020 | 21-Jan-2019 10:55 | CPT084_BH213_210119_... | □ | | |
| EM1900753-021 | 21-Jan-2019 11:00 | CPT084_BH213_210119_... | | | □ |
| EM1900753-022 | 21-Jan-2019 11:05 | CPT084_BH213_210119_... | □ | | |
| EM1900753-023 | 21-Jan-2019 11:15 | CPT084_BH213_210119_... | | | □ |
| EM1900753-024 | 21-Jan-2019 11:25 | CPT084_BH213_210119_... | □ | | |



| | | | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils |
|---------------|-------------------|-------------------------|---|------------------------|--|
| EM1900753-025 | 21-Jan-2019 12:50 | CPT084_BH207_210119_... | ☐ | | |
| EM1900753-026 | 21-Jan-2019 12:55 | CPT084_BH207_210119_... | | | ☐ |
| EM1900753-027 | 21-Jan-2019 13:00 | CPT084_BH207_210119_... | ☐ | | |
| EM1900753-028 | 21-Jan-2019 13:05 | CPT084_BH207_210119_... | | | ☐ |
| EM1900753-029 | 21-Jan-2019 13:10 | CPT084_BH207_210119_... | ☐ | | |
| EM1900753-030 | 21-Jan-2019 13:15 | CPT084_BH207_210119_... | ☐ | | |
| EM1900753-031 | 21-Jan-2019 13:50 | CPT084_BH209_210119_... | ☐ | | |
| EM1900753-032 | 21-Jan-2019 13:55 | CPT084_BH209_210119_... | | ☐ | |
| EM1900753-033 | 21-Jan-2019 14:00 | CPT084_BH209_210119_... | ☐ | | |
| EM1900753-034 | 21-Jan-2019 14:05 | CPT084_BH209_210119_... | ☐ | | |
| EM1900753-035 | 21-Jan-2019 14:10 | CPT084_BH209_210119_... | | ☐ | |
| EM1900753-036 | 21-Jan-2019 14:15 | CPT084_BH209_210119_... | ☐ | | |

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email

AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

Email

Email

Email

Email

Email

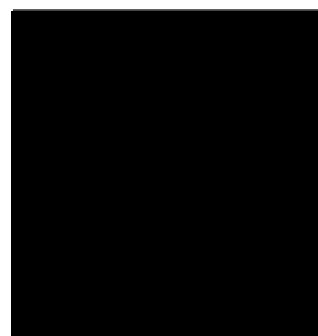
Email

Email

Email

Email

Email





ANZ
FQM - Generic Chain of Custody Form

| | | | | | | | |
|---|------------------------|--|----------|--|-------------|------------------------|--|
| CONSULTANT: AECOM | | ADDRESS/OFFICE: | | SAMPLER: S. MULLER | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GIJPP) EES | | MOBILE: | | ALS | |
| PROJECT NUMBER & TASK CODE: 6092634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: EN1096/14 | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY: | | COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: | | | | | |
| SOLUBLE IN WATER (Yes/No): | | | | | | | |
| FRACTION: Yes/No | | | | | | | |
| SAMPLE TEMPERATURE: | | | | | | | |
| CHILLED: Yes/No | | | | | | | |
| SAMPLE INFORMATION (code: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | TIME | Type / Code | Total bottles | |
| | CP1084-BH213-210119-05 | S | 21-11-19 | 1055 | | 15 bag | |
| | CP1084-BH213-210119-10 | | | 1100 | | | |
| | CP1084-BH213-210119-15 | | | 1105 | | | |
| | CP1084-BH213-210119-20 | | | 1115 | | | |
| | CP1084-BH213-210119-25 | | | 1125 | | | |
| | CP1084-BH213-210119-30 | | | 1150 | | | |
| | CP1084-BH213-210119-35 | | | 1205 | | | |
| | CP1084-BH213-210119-40 | | | 1255 | | | |
| | CP1084-BH213-210119-45 | | | 1300 | | | |
| | CP1084-BH213-210119-50 | | | 1305 | | | |
| | CP1084-BH213-210119-55 | | | 1310 | | | |
| | CP1084-BH213-210119-60 | | | 1315 | | | |
| | CP1084-BH213-210119-65 | | | 1350 | | | |
| | CP1084-BH213-210119-70 | | | 1355 | | | |
| | CP1084-BH213-210119-75 | | | 1400 | | | |
| | CP1084-BH213-210119-80 | | | 1405 | | | |
| | CP1084-BH213-210119-85 | | | 1410 | | | |
| | CP1084-BH213-210119-90 | | | 1415 | | | |
| RELINQUISHED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT: | | | |
| Name: | Date: | Name: | Date: | Con' Note No.: | | | |
| Of: | Time: | Of: | Time: | Transport Co.: | | | |
| <p>Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic</p> <p>V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Speciation bottle; HS = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic;</p> <p>F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag</p> <p>Soil Container Codes: Jar = Unpreserved glass jar</p> | | | | | | | |

Please freeze bags for acid sulfate analysis.

COC Page 2 of 2

ANZ FQM - Generic Chain of Custody Form

| | | | | | | | |
|---|------------------------|---|---------|--|-------------|------------------------|--------------------|
| CONSULTANT: AECOM | | ADDRESS/OFFICE: | | SAMPLER: S. new locs | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GIJPP) EES | | MOBILE: [REDACTED] | | ALS | |
| PROJECT NUMBER & TASK CODE: 60592034 | | P.O. NO.: | | EMAIL REPORT TO: [REDACTED] | | PHONE: [REDACTED] | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: EN/096/19 | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | <div style="text-align: center; font-size: 2em; font-weight: bold;">URGENT</div> | | | | | |
| COOLER SEAL (see instructions) | | <div style="text-align: center; font-size: 1.5em; font-weight: bold;">SPADS</div> | | | | | |
| SAMPLE TEMPERATURE | | <div style="text-align: center;"> <p>Environmental Division
Melbourne
Work Order Reference
EM1900753</p>  <p>Telephone : + 61 3 8549 9600</p> </div> | | | | | |
| COOLED: <input checked="" type="checkbox"/> | | <div style="text-align: center;"> <p>Soil Container Codes: Jar = Unpreserved glass jar</p> </div> | | | | | |
| COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: | | <div style="text-align: center;"> <p>Environmental Division
Melbourne
Work Order Reference
EM1900753</p>  <p>Telephone : + 61 3 8549 9600</p> </div> | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | TIME | Type / Code | Total bottles | Notes |
| 1 | CP1084-BH218-21019-0.2 | S | 21.1.19 | 0800 | | 1500g | X please freeze |
| 2 | CP1084-BH218-21019-0.5 | S | 21.1.19 | 0805 | | | X bags for Acid |
| 3 | CP1084-BH218-21019-1.0 | S | 21.1.19 | 0810 | | | X Sulfate Analysis |
| 4 | CP1084-BH218-21019-1.5 | S | 21.1.19 | 0815 | | | X |
| 5 | CP1084-BH218-21019-2.0 | S | 21.1.19 | 0820 | | | X |
| 6 | CP1084-BH218-21019-2.5 | S | 21.1.19 | 0825 | | | X |
| 7 | CP1084-BH218-21019-3.0 | S | 21.1.19 | 0830 | | | X |
| 8 | CP1084-BH218-21019-3.5 | S | 21.1.19 | 0835 | | | X |
| 9 | CP1084-BH218-21019-4.0 | S | 21.1.19 | 0840 | | | X |
| 10 | CP1084-BH218-21019-4.5 | S | 21.1.19 | 0845 | | | X |
| 11 | CP1084-BH218-21019-5.0 | S | 21.1.19 | 0850 | | | X |
| 12 | CP1084-BH218-21019-5.5 | S | 21.1.19 | 0855 | | | X |
| 13 | CP1084-BH218-21019-6.0 | S | 21.1.19 | 0900 | | | X |
| 14 | CP1084-BH218-21019-6.5 | S | 21.1.19 | 0905 | | | X |
| 15 | CP1084-BH218-21019-7.0 | S | 21.1.19 | 0910 | | | X |
| 16 | CP1084-BH218-21019-7.5 | S | 21.1.19 | 0915 | | | X |
| 17 | CP1084-BH218-21019-8.0 | S | 21.1.19 | 0920 | | | X |
| 18 | CP1084-BH218-21019-8.5 | S | 21.1.19 | 0925 | | | X |
| 19 | CP1084-BH218-21019-9.0 | S | 21.1.19 | 0930 | | | X |
| RELINQUISHED BY: | | Name: Pa. (any) | | Date: 4.3.19 | | Time: 11:40 | |
| RECEIVED BY: | | Name: Pa. (any) | | Date: 4.3.19 | | Time: 11:40 | |
| Name: | | Date: | | Name: | | Date: | |
| Of: | | Time: | | Of: | | Time: | |
| <p>Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; HS = HCl preserved Speculation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Substrate Soil; B = Unpreserved Bag.</p> | | | | | | | |

Please freeze bags for acid sulfate analysis

COC Page of

From: [REDACTED]@aecom.com>
Sent: Tuesday, 22 January 2019 3:51 PM
To: [REDACTED]
Subject: RE: On Hold - EM1900753 - AECOMAU (60592634)

Hi [REDACTED]

Please find below analysis for ASS:

1. CPT084_BH209_210119_0.5 = SPOCAS (EA029)
2. CPT084_BH209_210119_2.0 = SPOCAS (EA029)
- 3.
4. CPT084_BH213_210119_1.0 = Chromium Suite (EA033)
5. CPT084_BH213_210119_2.0 = Chromium Suite (EA033)
- 6.
7. CPT084_BH215_210119_0.5 = Chromium Suite (EA033)
8. CPT084_BH215_210119_1.5 = Chromium Suite (EA033)
- 9.
10. CPT084_BH217_210119_0.5 = Chromium Suite (EA033)
11. CPT084_BH217_210119_1.5 = Chromium Suite (EA033)
- 12.
13. CPT084_BH218_210119_0.5 = Chromium Suite (EA033)
14. CPT084_BH218_210119_2.0 = Chromium Suite (EA033)
- 15.

At 3 days TAT. Thanks!

[REDACTED]
Senior Environmental Engineer
[REDACTED]

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

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[LinkedIn](#) [Twitter](#) [Facebook](#) [Instagram](#)

From: [REDACTED]@alsglobal.com]
Sent: Monday, 21 January 2019 6:40 PM
To: [REDACTED]
Subject: On Hold - EM1900753 - AECOMAU (60592634)

Hi [REDACTED]

Please see attached samples on hold

Thanks

Regards

ANZ
FQM - Generic Chain of Custody Form

| CONSULTANT: AECOM | | ADDRESS / OFFICE | | SAMPLER: S. MacLellan | | Destination Laboratory | |
|--|------------------------|---|---------|--|-------------|---|--|
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GUIPP) EES | | MOBILE: | | ACLS | |
| PROJECT NUMBER & TASK COI: 6092634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: EN/096/19 | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | SAMPLER INFORMATION | | Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORe etc. | |
| COOLER SEAL (check & sign) | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 20 | CP1084-BH213-21019-0.5 | S | 21-1-19 | 1055 | | 150g | |
| 21 | CP1084-BH213-21019-1.0 | | | 1100 | | | |
| 22 | CP1084-BH213-21019-1.5 | | | 1105 | | | |
| 23 | CP1084-BH213-21019-2.0 | | | 1115 | | | |
| 24 | CP1084-BH213-21019-2.5 | | | 1125 | | | |
| 25 | CP1084-BH207-21019-0.2 | | | 1150 | | | |
| 26 | CP1084-BH207-21019-0.5 | | | 1155 | | | |
| 27 | CP1084-BH207-21019-1.0 | | | 1200 | | | |
| 28 | CP1084-BH207-21019-1.5 | | | 1205 | | | |
| 29 | CP1084-BH207-21019-2.0 | | | 1310 | | | |
| 30 | CP1084-BH207-21019-2.5 | | | 1315 | | | |
| 31 | CP1084-BH209-21019-0.2 | | | 1350 | | | |
| 32 | CP1084-BH209-21019-0.5 | | | 1355 | | | |
| 33 | CP1084-BH209-21019-1.0 | | | 1400 | | | |
| 34 | CP1084-BH209-21019-1.5 | | | 1405 | | | |
| 35 | CP1084-BH209-21019-2.0 | | | 1410 | | | |
| 36 | CP1084-BH209-21019-2.5 | | | 1415 | | | |

| RELINQUISHED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
|------------------|-------|--------------|---------------|--------------------|--|
| Name: | Date: | Name: | Date: | Con' Note No: | |
| Of: | Time: | Of: | Time: | Transport Co: | |
| | | P. MacLellan | 21/1/19 | | |
| | | | Time: 4.30 PM | | |

Water Containment Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.
Soil Container Codes: Jar = Unpreserved glass jar

Please freeze bags for acid sulfate analysis.
COC Page 2 of 2

[REDACTED]

From: [REDACTED]<[REDACTED]@aecom.com>
Sent: Tuesday, 22 January 2019 3:51 PM
To: [REDACTED]
Subject: RE: On Hold - EM1900753 - AECOMAU (60592634)

Hi [REDACTED]

Please find below analysis for ASS:

1. CPT084_BH209_210119_0.5 = SPOCAS (EA029)
2. CPT084_BH209_210119_2.0 = SPOCAS (EA029)
- 3.
4. CPT084_BH213_210119_1.0 = Chromium Suite (EA033)
5. CPT084_BH213_210119_2.0 = Chromium Suite (EA033)
- 6.
7. CPT084_BH215_210119_0.5 = Chromium Suite (EA033)
8. CPT084_BH215_210119_1.5 = Chromium Suite (EA033)
- 9.
10. CPT084_BH217_210119_0.5 = Chromium Suite (EA033)
11. CPT084_BH217_210119_1.5 = Chromium Suite (EA033)
- 12.
13. CPT084_BH218_210119_0.5 = Chromium Suite (EA033)
14. CPT084_BH218_210119_2.0 = Chromium Suite (EA033)
- 15.

At 3 days TAT. Thanks!

[REDACTED]
Senior Environmental Engineer

[REDACTED]
[\[REDACTED\]@aecom.com](mailto:[REDACTED]@aecom.com)

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

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From: [REDACTED]<[REDACTED]@alsglobal.com>
Sent: Monday, 21 January 2019 6:40 PM
To: [REDACTED]
Subject: On Hold - EM1900753 - AECOMAU (60592634)

Hi [REDACTED]

Please see attached samples on hold

Thanks

Regards

[REDACTED]

From: [REDACTED]@aecom.com>
Sent: Wednesday, 23 January 2019 9:00 AM
To: [REDACTED]
Subject: RE: SRN for ALS Workorder : EM1900753 | Overall Description: Gas Import Jetty Pipeline Project (GIJPP) EES

Hi [REDACTED]

Can you please include the following analysis? Thanks

- CPT084_BH207_210119_0.5 = Chromium Suite (EA033)
- CPT084_BH207_210119_1.5 = Chromium Suite (EA033)

[REDACTED]
Senior Environmental Engineer

[REDACTED]
[REDACTED]@aecom.com

AECOM

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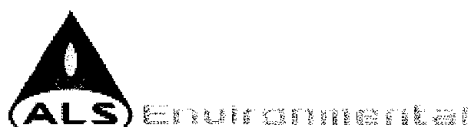
[LinkedIn](#) [Twitter](#) [Facebook](#) [Instagram](#)

From: angel-no-reply@alsglobal.com [mailto:angel-no-reply@alsglobal.com]

Sent: Tuesday, 22 January 2019 7:32 PM

To: [REDACTED]

Subject: SRN for ALS Workorder : EM1900753 | Overall Description: Gas Import Jetty Pipeline Project (GIJPP) EES



Deliverables for ALS Workorder EM1900753

Project: 60592634

**Overall Description: Gas Import Jetty Pipeline Project
(GIJPP) EES**

Dear [REDACTED]

CERTIFICATE OF ANALYSIS

Work Order : **EM1900753**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : [REDACTED]
Site : Gas Import Jetty Pipeline
Quote number : EN/096/18
No. of samples received : 36
No. of samples analysed : 12

Page : 1 of 6
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 21-Jan-2019 16:00
Date Analysis Commenced : 25-Jan-2019
Issue Date : 29-Jan-2019 09:22



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| Signatories | Position | Accreditation Category |
|--|----------------------------------|---|
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO_3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO_3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m³ in-situ soil, multiply reported results x wet bulk density of soil in t/m³.



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT084_BH218_2101
19_0.5 | CPT084_BH218_2101
19_2.0 | CPT084_BH217_2101
19_0.5 | CPT084_BH217_2101
19_1.5 | CPT084_BH215_2101
19_0.5 |
|--|------------|-------|-------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 21-Jan-2019 08:45 | 21-Jan-2019 09:00 | 21-Jan-2019 09:30 | 21-Jan-2019 09:40 | 21-Jan-2019 10:15 |
| Compound | CAS Number | LOR | Unit | EM1900753-002 | EM1900753-005 | EM1900753-008 | EM1900753-010 | EM1900753-014 |
| | | | | Result | Result | Result | Result | Result |
| EA033-A: Actual Acidity | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 8.0 | 7.1 | 6.0 | 5.9 | 5.8 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 4 | 7 | 7 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| EA033-B: Potential Acidity | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.009 | 0.006 | 0.011 | 0.007 | 0.008 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | <10 | <10 | <10 |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | 1.51 | 0.99 | ---- | ---- | ---- |
| acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | 301 | 198 | ---- | ---- | ---- |
| sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | 0.48 | 0.32 | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | <10 | 11 | 11 | 12 |
| Liming Rate | ---- | 1 | kg CaCO3/t | <1 | <1 | <1 | <1 | <1 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | <10 | 11 | 11 | 12 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | <1 | <1 | <1 | <1 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT084_BH215_2101
19_1.5 | CPT084_BH213_2101
19_1.0 | CPT084_BH213_2101
19_2.0 | CPT084_BH207_2101
19_0.5 | CPT084_BH207_2101
19_1.5 |
|---|------------|-------|-------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 21-Jan-2019 10:25 | 21-Jan-2019 11:00 | 21-Jan-2019 11:15 | 21-Jan-2019 12:55 | 21-Jan-2019 13:05 |
| Compound | CAS Number | LOR | Unit | EM1900753-016 | EM1900753-021 | EM1900753-023 | EM1900753-026 | EM1900753-028 |
| | | | | Result | Result | Result | Result | Result |
| EA033-A: Actual Acidity | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.2 | 5.6 | 5.7 | 6.0 | 5.8 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 16 | 9 | 6 | 5 | 7 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.03 | <0.02 | <0.02 | <0.02 | <0.02 |
| EA033-B: Potential Acidity | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.007 | <0.005 | <0.005 | 0.032 | 0.007 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | <10 | 20 | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.03 | <0.02 | <0.02 | 0.04 | <0.02 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 21 | <10 | <10 | 25 | 11 |
| Liming Rate | ---- | 1 | kg CaCO3/t | 2 | <1 | <1 | 2 | <1 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.03 | <0.02 | <0.02 | 0.04 | <0.02 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 21 | <10 | <10 | 25 | 11 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 2 | <1 | <1 | 2 | <1 |



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|---|------------|-------|-------------|------------------|-----------------------------|-----------------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT084_BH209_2101
19_0.5 | CPT084_BH209_2101
19_2.0 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 21-Jan-2019 13:55 | 21-Jan-2019 14:10 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1900753-032 | EM1900753-035 | ----- | ----- | ----- | ----- |
| | | | | Result | Result | ---- | ---- | ---- | ---- |
| EA029-A: pH Measurements | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 4.8 | 5.4 | ---- | ---- | ---- | ---- |
| pH OX (23B) | ---- | 0.1 | pH Unit | 3.2 | 6.5 | ---- | ---- | ---- | ---- |
| EA029-B: Acidity Trail | | | | | | | | | |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 34 | 9 | ---- | ---- | ---- | ---- |
| Titrateable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | 189 | 11 | ---- | ---- | ---- | ---- |
| Titrateable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | 155 | <2 | ---- | ---- | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.020 | % pyrite S | 0.054 | <0.020 | ---- | ---- | ---- | ---- |
| sulfidic - Titrateable Peroxide Acidity (s-23G) | ---- | 0.020 | % pyrite S | 0.303 | <0.020 | ---- | ---- | ---- | ---- |
| sulfidic - Titrateable Sulfidic Acidity (s-23H) | ---- | 0.020 | % pyrite S | 0.249 | <0.020 | ---- | ---- | ---- | ---- |
| EA029-C: Sulfur Trail | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.020 | % S | <0.020 | 0.020 | ---- | ---- | ---- | ---- |
| Peroxide Sulfur (23De) | ---- | 0.020 | % S | 0.092 | 0.024 | ---- | ---- | ---- | ---- |
| Peroxide Oxidisable Sulfur (23E) | ---- | 0.020 | % S | 0.092 | <0.020 | ---- | ---- | ---- | ---- |
| acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | 58 | <10 | ---- | ---- | ---- | ---- |
| EA029-D: Calcium Values | | | | | | | | | |
| KCl Extractable Calcium (23Vh) | ---- | 0.020 | % Ca | 0.414 | 0.374 | ---- | ---- | ---- | ---- |
| Peroxide Calcium (23Wh) | ---- | 0.020 | % Ca | 0.414 | 0.386 | ---- | ---- | ---- | ---- |
| Acid Reacted Calcium (23X) | ---- | 0.020 | % Ca | <0.020 | <0.020 | ---- | ---- | ---- | ---- |
| acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | <10 | ---- | ---- | ---- | ---- |
| sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.020 | % S | <0.020 | <0.020 | ---- | ---- | ---- | ---- |
| EA029-E: Magnesium Values | | | | | | | | | |
| KCl Extractable Magnesium (23Sm) | ---- | 0.020 | % Mg | 0.290 | 0.358 | ---- | ---- | ---- | ---- |
| Peroxide Magnesium (23Tm) | ---- | 0.020 | % Mg | 0.294 | 0.366 | ---- | ---- | ---- | ---- |
| Acid Reacted Magnesium (23U) | ---- | 0.020 | % Mg | <0.020 | <0.020 | ---- | ---- | ---- | ---- |
| Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | <10 | ---- | ---- | ---- | ---- |
| sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.020 | % S | <0.020 | <0.020 | ---- | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | ---- | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.15 | <0.02 | ---- | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 91 | 12 | ---- | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | 7 | <1 | ---- | ---- | ---- | ---- |



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|---|------------|------|-------------|-----------------------------|-----------------------------|-----------------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT084_BH209_2101
19_0.5 | CPT084_BH209_2101
19_2.0 | ---- | ---- | ---- |
| | | | | Client sampling date / time | 21-Jan-2019 13:55 | 21-Jan-2019 14:10 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900753-032 | EM1900753-035 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting - Continued | | | | | | | | | |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | 0.15 | <0.02 | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | 91 | 12 | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | 7 | <1 | ---- | ---- | ---- |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900753 | Page | : 1 of 6 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 21-Jan-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 25-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 29-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : Gas Import Jetty Pipeline | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 36 | | |
| No. of samples analysed | : 12 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]

Senior Acid Sulfate Soil Chemist

Brisbane Acid Sulphate Soils, Stafford, QLD

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA029-A: pH Measurements (QC Lot: 2153474) | | | | | | | | | |
| EM1900682-008 | Anonymous | EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | 6.0 | 6.0 | 0.00 | 0% - 20% |
| | | EA029: pH OX (23B) | ---- | 0.1 | pH Unit | 4.4 | 4.5 | 3.13 | 0% - 20% |
| EA029-B: Acidity Trail (QC Lot: 2153474) | | | | | | | | | |
| EM1900682-008 | Anonymous | EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | 4 | 3 | 0.00 | No Limit |
| | | EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | 4 | 3 | 0.00 | No Limit |
| EA029-C: Sulfur Trail (QC Lot: 2153474) | | | | | | | | | |
| EM1900682-008 | Anonymous | EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-D: Calcium Values (QC Lot: 2153474) | | | | | | | | | |
| EM1900682-008 | Anonymous | EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | 0.037 | 0.036 | 0.00 | No Limit |
| | | EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | 0.036 | 0.038 | 5.67 | No Limit |
| | | EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-E: Magnesium Values (QC Lot: 2153474) | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|-------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA029-E: Magnesium Values (QC Lot: 2153474) - continued | | | | | | | | | |
| EM1900682-008 | Anonymous | EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-H: Acid Base Accounting (QC Lot: 2153474) | | | | | | | | | |
| EM1900682-008 | Anonymous | EA029: ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 0.00 | No Limit |
| | | EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA029: Liming Rate | ---- | 1 | kg CaCO3/t | <1 | <1 | 0.00 | No Limit |
| | | EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | <1 | 0.00 | No Limit |
| | | EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| | | EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA033-A: Actual Acidity (QC Lot: 2153477) | | | | | | | | | |
| EM1900753-002 | CPT084_BH218_210119_0.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 8.0 | 7.9 | 1.26 | 0% - 20% |
| ES1901867-001 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 8.3 | 8.4 | 1.20 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2153477) | | | | | | | | | |
| EM1900753-002 | CPT084_BH218_210119_0.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.009 | 0.009 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| ES1901867-001 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.017 | 0.017 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | 11 | 11 | 0.00 | No Limit |
| EA033-C: Acid Neutralising Capacity (QC Lot: 2153477) | | | | | | | | | |
| EM1900753-002 | CPT084_BH218_210119_0.5 | EA033: Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | 1.51 | 1.50 | 0.00 | 0% - 20% |
| | | EA033: sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | 0.48 | 0.48 | 0.00 | 0% - 20% |
| | | EA033: acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | 301 | 300 | 0.00 | 0% - 20% |
| ES1901867-001 | Anonymous | EA033: Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | 3.26 | 3.21 | 1.42 | 0% - 20% |

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Work Order : EM1900753
Client : AECOM Australia Pty Ltd
Project : 60592634



Sub-Matrix: **SOIL**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA033-C: Acid Neutralising Capacity (QC Lot: 2153477) - continued | | | | | | | | | |
| ES1901867-001 | Anonymous | EA033: sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | 1.04 | 1.03 | 1.42 | 0% - 20% |
| | | EA033: acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | 651 | 642 | 1.42 | 0% - 20% |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA029-A: pH Measurements (QCLot: 2153474) | | | | | | | | |
| EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA029: pH OX (23B) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 101 | 70 | 130 |
| EA029-B: Acidity Trail (QCLot: 2153474) | | | | | | | | |
| EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 86.9 | 70 | 130 |
| EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | <2 | 29.1 mole H+ / t | 87.6 | 70 | 130 |
| EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | <2 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-C: Sulfur Trail (QCLot: 2153474) | | | | | | | | |
| EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | 0.052 % S | 93.2 | 70 | 130 |
| EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | <0.020 | 0.145 % S | 94.7 | 70 | 130 |
| EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029-D: Calcium Values (QCLot: 2153474) | | | | | | | | |
| EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | <0.020 | 0.151 % Ca | 116 | 70 | 130 |
| EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | <0.020 | 0.296 % Ca | 97.8 | 70 | 130 |
| EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-E: Magnesium Values (QCLot: 2153474) | | | | | | | | |
| EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | <0.020 | 0.176 % Mg | 106 | 70 | 130 |
| EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | <0.020 | 0.175 % Mg | 103 | 70 | 130 |
| EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | ---- | ---- | ---- | ---- |
| EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting (QCLot: 2153474) | | | | | | | | |
| EA029: ANC Fineness Factor | ---- | 0.5 | - | <0.5 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |



| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-------|-------------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| Method: Compound | CAS Number | LOR | Unit | | Spike | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | Concentration | LCS | Low | High |
| EA033-A: Actual Acidity (QCLot: 2153477) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 86.5 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2153477) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 92.5 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-C: Acid Neutralising Capacity (QCLot: 2153477) | | | | | | | | |
| EA033: Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | <0.01 | 10 % CaCO3 | 106 | 70 | 130 |
| EA033: acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033: sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | <0.01 | ---- | ---- | ---- | ---- |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|-----------------------------|-------------------------|------------------------------------|
| Work Order | : EM1900753 | Page | : 1 of 5 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 21-Jan-2019 |
| Site | : Gas Import Jetty Pipeline | Issue Date | : 29-Jan-2019 |
| Sampler | : [REDACTED] | No. of samples received | : 36 |
| Order number | : | No. of samples analysed | : 12 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Evaluation | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|-------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | | Date analysed | Due for analysis | Evaluation |
| EA029-A: pH Measurements | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH209_210119_0.5,
CPT084_BH209_210119_2.0 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ | |
| EA029-B: Acidity Trail | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH209_210119_0.5,
CPT084_BH209_210119_2.0 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ | |
| EA029-C: Sulfur Trail | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH209_210119_0.5,
CPT084_BH209_210119_2.0 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ | |
| EA029-D: Calcium Values | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH209_210119_0.5,
CPT084_BH209_210119_2.0 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ | |
| EA029-E: Magnesium Values | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH209_210119_0.5,
CPT084_BH209_210119_2.0 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ | |
| EA029-F: Excess Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH209_210119_0.5,
CPT084_BH209_210119_2.0 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ | |
| EA029-G: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH209_210119_0.5,
CPT084_BH209_210119_2.0 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ | |
| EA029-H: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT084_BH209_210119_0.5,
CPT084_BH209_210119_2.0 | 21-Jan-2019 | 25-Jan-2019 | 16-Oct-2021 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ | |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT084_BH218_210119_0.5,
CPT084_BH217_210119_0.5,
CPT084_BH215_210119_0.5,
CPT084_BH213_210119_1.0,
CPT084_BH207_210119_0.5,
CPT084_BH218_210119_2.0,
CPT084_BH217_210119_1.5,
CPT084_BH215_210119_1.5,
CPT084_BH213_210119_2.0,
CPT084_BH207_210119_1.5 | 21-Jan-2019 | 25-Jan-2019 | 21-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 21-Jan-2019 | 25-Jan-2019 | 21-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| CPT084_BH218_210119_0.5, | CPT084_BH218_210119_2.0, | | | | | | | |
| CPT084_BH217_210119_0.5, | CPT084_BH217_210119_1.5, | | | | | | | |
| CPT084_BH215_210119_0.5, | CPT084_BH215_210119_1.5, | | | | | | | |
| CPT084_BH213_210119_1.0, | CPT084_BH213_210119_2.0, | | | | | | | |
| CPT084_BH207_210119_0.5, | CPT084_BH207_210119_1.5 | | | | | | | |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 21-Jan-2019 | 25-Jan-2019 | 21-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| CPT084_BH218_210119_0.5, | CPT084_BH218_210119_2.0, | | | | | | | |
| CPT084_BH217_210119_0.5, | CPT084_BH217_210119_1.5, | | | | | | | |
| CPT084_BH215_210119_0.5, | CPT084_BH215_210119_1.5, | | | | | | | |
| CPT084_BH213_210119_1.0, | CPT084_BH213_210119_2.0, | | | | | | | |
| CPT084_BH207_210119_0.5, | CPT084_BH207_210119_1.5 | | | | | | | |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 21-Jan-2019 | 25-Jan-2019 | 21-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| CPT084_BH218_210119_0.5, | CPT084_BH218_210119_2.0, | | | | | | | |
| CPT084_BH217_210119_0.5, | CPT084_BH217_210119_1.5, | | | | | | | |
| CPT084_BH215_210119_0.5, | CPT084_BH215_210119_1.5, | | | | | | | |
| CPT084_BH213_210119_1.0, | CPT084_BH213_210119_2.0, | | | | | | | |
| CPT084_BH207_210119_0.5, | CPT084_BH207_210119_1.5 | | | | | | | |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033) | | 21-Jan-2019 | 25-Jan-2019 | 21-Jan-2020 | ✓ | 25-Jan-2019 | 25-Apr-2019 | ✓ |
| CPT084_BH218_210119_0.5, | CPT084_BH218_210119_2.0, | | | | | | | |
| CPT084_BH217_210119_0.5, | CPT084_BH217_210119_1.5, | | | | | | | |
| CPT084_BH215_210119_0.5, | CPT084_BH215_210119_1.5, | | | | | | | |
| CPT084_BH213_210119_1.0, | CPT084_BH213_210119_2.0, | | | | | | | |
| CPT084_BH207_210119_0.5, | CPT084_BH207_210119_1.5 | | | | | | | |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|--------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 6 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| <i>Analytical Methods</i> | <i>Method</i> | <i>Matrix</i> | <i>Method Descriptions</i> |
|---|---------------|---------------|---|
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | SOIL | In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| <i>Preparation Methods</i> | <i>Method</i> | <i>Matrix</i> | <i>Method Descriptions</i> |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |

FQM - Generic Chain of Custody Form

| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: 8088 | | Destination Laboratory | |
|--|------------------|---|----------|--|-------------------|------------------------|--|
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GUPP) EES | | MOBILE: 08 9582844 | | ALS | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: 8088 | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | |
| COOLER / REFRIGERATOR (Temperature): | | | | | | | |
| HOLD (Yes/No): | | | | | | | |
| SAMPLE TEMPERATURE: | | | | | | | |
| CHILLED (Yes/No): | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| | QC155-230119 | S | 23/01/19 | | 1x ASS, 1x STAR | 2 | |
| | QC255-230119 | S | | | ↓ | 2 | |
| | QC355-230119 | W | | 8:15 | 9x sample | 9 | |
| | QC455-230119 | W | | 6:15 | purple | 2 | |
| | QC561-230119 | W | | - | purple | 1 | |
| | QC562-230119 | W | | - | purple | 1 | |
| | CPT082-BH31-0.0 | S | | | 1x STAR, 1x A.S.S | 2 | |
| | CPT082-BH31-0.5 | S | | | | 2 | |
| | CPT082-BH31-1.0 | S | | | | 2 | |
| | CPT082-BH31-1.5 | S | | | | 2 | |
| | CPT082-BH31-2.0 | S | | | | 2 | |
| | CPT082-BH31-2.5 | S | | | | 2 | |
| | CPT082-BH201-0.0 | S | | | A.S.S bag | 1 | |
| | CPT082-BH201-0.5 | S | | | | 1 | |
| | CPT082-BH201-1.0 | S | | | | 1 | |
| | CPT082-BH201-1.5 | S | | | | 1 | |
| | CPT082-BH201-2.0 | S | | | | 1 | |
| | CPT082-BH201-2.5 | S | | | | 1 | |
| | CPT082-BH202-0.0 | S | | 11:00 | | 1 | |

Environmental Division
Melbourne
Work Order Reference
EM1900908



Telephone : + 61 3 9549 9600

| | | | | | |
|---|-----------------------|--------------------|-----------------------|--------------------|--|
| RELINQUISHED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
| Name: P. H. H. | Date: 28/01/19 | Name: SCOTT | Date: 28/01/19 | Con' Note No: | |
| Of: 8088 | Time: 3:00PM | Of: ALS | Time: 14:55 | Transport Co: | |
| Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved Plastic; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Airtight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved; Amber Glass; H = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag. | | | | | |

| CONSULTANT: ARECOM | | ADDRESS / OFFICE: | | SAMPLER: | | Destination Laboratory | |
|--|------------------|--|---------|---|-------------|------------------------|-----------------------|
| PROJECT MANAGER (PM): | | SITE: | | PHONE: | | A.L.S. | |
| PROJECT NUMBER & TASK CODE: 60592635 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices): | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | |
| COOLER SEAL (circle appropriate) | | | | | | | |
| Intact: Yes No | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes No | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, V = Water) | | CONTAINER INFORMATION | | | | | |
| AUS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| | CP1082-BH202-0.5 | S | 23/1/17 | 11:05 | 1 x A-S-5 | 1 | ✓ Please A.S.S freeze |
| | CP1082-BH202-1.0 | S | | 11:10 | | 1 | ✓ |
| | CP1082-BH202-1.5 | S | | 11:20 | | 1 | ✓ |
| | CP1082-BH202-2.0 | S | | 11:25 | | 1 | ✓ |
| | CP1082-BH202-2.5 | S | | 11:30 | | 1 | ✓ |
| | CP1082-BH203-0.0 | S | | 9:55 | | 1 | ✓ |
| | CP1082-BH203-0.5 | S | | 10:15 | | 1 | ✓ |
| | CP1082-BH203-1.0 | S | | 10:20 | | 1 | ✓ |
| | CP1082-BH203-1.5 | S | | 10:25 | | 1 | ✓ |
| | CP1082-BH203-2.0 | S | | 10:30 | | 1 | ✓ |
| | CP1082-BH203-2.5 | S | | 10:40 | | 1 | ✓ |
| | CP1082-BH204-0.0 | S | | 9:20 | TSAR | 2 | ✓ |
| | CP1082-BH204-0.5 | S | | 9:25 | | 1 | ✓ |
| | CP1082-BH204-1.0 | S | | 9:30 | | 1 | ✓ |
| | CP1082-BH204-1.5 | S | | 9:40 | | 1 | ✓ |
| | CP1082-BH204-2.0 | S | | 9:45 | | 1 | ✓ |
| | CP1082-BH204-2.5 | S | | 9:50 | | 1 | ✓ |

| RELINQUISHED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
|------------------|--------------|--------------|-------------|--------------------|---------------|
| Name: | Date: | Name: | Date: | Conf. Note No: | Transport Co: |
| FORM HEADINGS | 23/01/19 | SCOTT | 23/1/19 | | |
| ARECOM | Time: 3:00PM | ALS | Time: 14:55 | | |

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; NV = Airfreight Unpreserved Vial SG; S = Sulfuric Preserved; Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; Soil Container Codes: Jar = Unpreserved glass jar

ANZ
FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|------------------|--|----------|--|----------------|---|--|
| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: PORT | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: Gas Import Jetty Pipeline Project (GIJPP) EES | | MOBILE: | | ALS | |
| PROJECT NUMBER & TASK CODE: 40582811-60592654 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | <div style="text-align: center; font-size: 2em; font-weight: bold;">URGENT</div> | | Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | |
| COOLING / HEATING (if required) | | | | | | | |
| INSTRUMENTS / METHODS | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHECKED: <input checked="" type="checkbox"/> | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | | | CONTAINER INFORMATION | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | QC155-230119 | S | 23/01/19 | | 1x ASS, 1x JAR | 2 | |
| 2 | QC255-230119 | S | | | ↓ | 2 | |
| 3 | QC355-230119 | W | | 8:15 | 9x sample | 9 | |
| 4 | QC455-230119 | W | | 8:15 | purple | 2 | |
| 5 | QC561-230119 | W | | - | purple | 1 | |
| 6 | QC562-230119 | W | | - | purple | 1 | |
| 7 | CPT082-BH31-0.0 | S | | | 1x JAR, 1x ASS | 2 | |
| 8 | CPT082-BH31-0.5 | S | | | | 2 | |
| 9 | CPT082-BH31-1.0 | S | | | | 2 | |
| 10 | CPT082-BH31-1.5 | S | | | | 2 | |
| 11 | CPT082-BH31-2.0 | S | | | | 2 | |
| 12 | CPT082-BH31-2.5 | S | | | | 2 | |
| 13 | CPT082-BH201-0.0 | S | | | ASS bag | 1 | |
| 14 | CPT082-BH201-0.5 | S | | | | 1 | |
| 15 | CPT082-BH201-1.0 | S | | | | 1 | |
| 16 | CPT082-BH201-1.5 | S | | | | 1 | |
| 17 | CPT082-BH201-2.0 | S | | | | 1 | |
| 18 | CPT082-BH201-2.5 | S | | | | 1 | |
| 19 | CPT082-BH202-0.0 | S | | 11:00 | | 1 | |
| RECEIVED BY: | | | | RECEIVED BY: | | | |
| Name: PORT | | Date: 23/01/19 | | Name: SCOTT | | Date: 23/01/19 | |
| Of: HELM | | Time: 3:00 PM | | Of: ACS | | Time: 14:55 | |
| Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; BH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. | | | | Soil Container Codes: Jar = Unpreserved Jar | | | |

Environmental Division
Melbourne
Work Order Reference
EM1900908



Telephone : + 61-3-8649 9600

[illegible]

From: [REDACTED]<[REDACTED]@aecom.com>
Sent: Thursday, 24 January 2019 11:47 AM
To: [REDACTED]
Subject: RE: On Hold - EM1900908 - AECOMAU (60592634)

Hi [REDACTED]

Please analyse:

1. CPT082_BH31_230119_0.0 = IWRG621
2. CPT082_BH31_230119_0.5 = IWRG621
3. CPT082_BH204_230119_0.0 = IWRG621
4. CPT082_BH204_230119_0.5 = IWRG621
5. CPT082_BH31_230119_0.5 = Chromium Suite (EA033)
6. CPT082_BH31_230119_2.0 = Chromium Suite (EA033)
7. CPT082_BH201_230119_0.5 = Chromium Suite (EA033)
8. CPT082_BH201_230119_1.5 = Chromium Suite (EA033)
9. CPT082_BH202_230119_0.5 = SPOCAS (EA029)
10. CPT082_BH202_230119_1.5 = SPOCAS (EA029)
11. CPT082_BH203_230119_0.5 = Chromium Suite (EA033)
12. CPT082_BH203_230119_1.5 = Chromium Suite (EA033)
13. CPT082_BH204_230119_0.5 = Chromium Suite (EA033)
14. CPT082_BH204_230119_1.5 = Chromium Suite (EA033)
15. QC155_230119 = IWRG621
16. QC255_230119 = IWRG621 (Triplicate, please forward to Eurofins)
17. QC355_230119 = IWRG621 water equivalent
18. QC455_230119 = TPH(C6-C9)/BTEXN
19. QC561_230119 = TPH(C6-C9)/BTEXN
20. QC562_230119 = TPH(C6-C9)/BTEXN

At 3 days TAT. Thanks!

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

[LinkedIn](#) [Twitter](#) [Facebook](#) [Instagram](#)

From: [REDACTED]<[REDACTED]@alsglobal.com>
Sent: Thursday, 24 January 2019 10:29 AM
To: [REDACTED]
Subject: On Hold - EM1900908 - AECOMAU (60592634)

Hi [REDACTED]

Please find attached samples on hold

Thanks

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900908

| | |
|---|--|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634 1.0</p> <p>Order number : 60592634 1.0</p> <p>C-O-C number : ----</p> <p>Site : ----</p> <p>Sampler : [REDACTED]</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 4</p> <p>Quote number : EB2017AECOMAU0014 (EN/004/16)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|---|--|

Dates

| | |
|---|--|
| <p>Date Samples Received : 23-Jan-2019 14:55</p> <p>Client Requested Due Date : 30-Jan-2019</p> | <p>Issue Date : 24-Jan-2019</p> <p>Scheduled Reporting Date : 30-Jan-2019</p> |
|---|--|

Delivery Details

| | |
|--|--|
| <p>Mode of Delivery : Client Drop Off</p> <p>No. of coolers/boxes : 2</p> <p>Receipt Detail :</p> | <p>Security Seal : Not Available</p> <p>Temperature : 3.4°C - Ice present</p> <p>No. of samples received / analysed : 35 / 17</p> |
|--|--|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|----------------------------------|--|
| Dissolved Mercury by FIMS : EG035F | | |
| QC355_230119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite A : EG020A-F | | |
| QC355_230119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite B : EG020B-F | | |
| QC355_230119 | - Clear Plastic Bottle - Natural | - Clear Plastic Bottle - Nitric Acid; Filtered |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16 + Total Cr
IWRG 621 (including Total Chromium) |
|----------------------|-----------------------------|------------------|---|------------------------|--|--------------------------------------|---|
| EM1900908-001 | 23-Jan-2019 00:00 | QC155_230119 | | | | ✓ | ✓ |
| EM1900908-006 | 23-Jan-2019 00:00 | CPT082_BH31_0.0 | | | | ✓ | ✓ |
| EM1900908-007 | 23-Jan-2019 00:00 | CPT082_BH31_0.5 | | | ✓ | ✓ | ✓ |
| EM1900908-008 | 23-Jan-2019 00:00 | CPT082_BH31_1.0 | ✓ | | | | |
| EM1900908-009 | 23-Jan-2019 00:00 | CPT082_BH31_1.5 | ✓ | | | | |
| EM1900908-010 | 23-Jan-2019 00:00 | CPT082_BH31_2.0 | | | ✓ | | |
| EM1900908-011 | 23-Jan-2019 00:00 | CPT082_BH31_2.5 | ✓ | | | | |
| EM1900908-012 | 23-Jan-2019 00:00 | CPT082_BH201_0.0 | ✓ | | | | |
| EM1900908-013 | 23-Jan-2019 00:00 | CPT082_BH201_0.5 | | | ✓ | | |
| EM1900908-014 | 23-Jan-2019 00:00 | CPT082_BH201_1.0 | ✓ | | | | |
| EM1900908-015 | 23-Jan-2019 00:00 | CPT082_BH201_1.5 | | | ✓ | | |
| EM1900908-016 | 23-Jan-2019 00:00 | CPT082_BH201_2.0 | ✓ | | | | |
| EM1900908-017 | 23-Jan-2019 00:00 | CPT082_BH201_2.5 | ✓ | | | | |
| EM1900908-018 | 23-Jan-2019 00:00 | CPT082_BH202_0.0 | ✓ | | | | |
| EM1900908-019 | 23-Jan-2019 00:00 | CPT082_BH202_0.5 | | ✓ | | | |
| EM1900908-020 | 23-Jan-2019 00:00 | CPT082_BH202_1.0 | ✓ | | | | |
| EM1900908-021 | 23-Jan-2019 00:00 | CPT082_BH202_1.5 | | ✓ | | | |
| EM1900908-022 | 23-Jan-2019 00:00 | CPT082_BH202_2.0 | ✓ | | | | |
| EM1900908-023 | 23-Jan-2019 00:00 | CPT082_BH202_2.5 | ✓ | | | | |
| EM1900908-024 | 23-Jan-2019 00:00 | CPT082_BH203_0.0 | ✓ | | | | |
| EM1900908-025 | 23-Jan-2019 00:00 | CPT082_BH203_0.5 | | | ✓ | | |
| EM1900908-026 | 23-Jan-2019 00:00 | CPT082_BH203_1.0 | ✓ | | | | |
| EM1900908-027 | 23-Jan-2019 00:00 | CPT082_BH203_1.5 | | | ✓ | | |
| EM1900908-028 | 23-Jan-2019 00:00 | CPT082_BH203_2.0 | ✓ | | | | |
| EM1900908-029 | 23-Jan-2019 00:00 | CPT082_BH203_2.5 | ✓ | | | | |
| EM1900908-030 | 23-Jan-2019 00:00 | CPT082_BH204_0.0 | | | | ✓ | ✓ |
| EM1900908-031 | 23-Jan-2019 00:00 | CPT082_BH204_0.5 | | | ✓ | | |
| EM1900908-032 | 23-Jan-2019 00:00 | CPT082_BH204_1.0 | ✓ | | | | |
| EM1900908-033 | 23-Jan-2019 00:00 | CPT082_BH204_1.5 | | | ✓ | | |
| EM1900908-034 | 23-Jan-2019 00:00 | CPT082_BH204_2.0 | ✓ | | | | |



| | | | | | | | |
|---------------|-------------------|------------------|---|------------------------|--|--------------------------------------|---|
| | | | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16 + Total Cr
IWRG 621 (including Total Chromium) |
| EM1900908-035 | 23-Jan-2019 00:00 | CPT082_BH204_2.5 | ✓ | | | | |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------------------|
| EM1900908-002 | 23-Jan-2019 00:00 | QC355_230119 | ✓ | |
| EM1900908-003 | 23-Jan-2019 00:00 | QC455_230119 | | ✓ |
| EM1900908-004 | 23-Jan-2019 00:00 | QC561_230119 | | ✓ |
| EM1900908-005 | 23-Jan-2019 00:00 | QC562_230119 | | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

| <div>□ □ □</div>
Client Sample ID(s) | Container | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|---|--------------------------------|--------------------|------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| QC355_230119 | Clear Plastic Bottle - Natural | ---- | 23-Jan-2019 | 23-Jan-2019 | ✓ | 24-Jan-2019 | ✗ |



Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- Chain of Custody (CoC) (COC)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)

Email

- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)

Email

- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)

Email

- A4 - AU Sample Receipt Notification - Environmental HT (SRN)

Email

- Chain of Custody (CoC) (COC)

Email

- EDI Format - ENMRG (ENMRG)

Email

- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)

Email

- EDI Format - ESDAT (ESDAT)

Email

- EDI Format - XTab (XTAB)

Email

- Electronic SRN for EQUIS (ESRN_EQUIS)

Email

- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

Email

CERTIFICATE OF ANALYSIS

Work Order : **EM1900908**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634 1.0
Order number : 60592634 1.0
C-O-C number : ----
Sampler : [REDACTED]
Site : ----
Quote number : EN/004/16
No. of samples received : 35
No. of samples analysed : 17

Page : 1 of 21
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 23-Jan-2019 14:55
Date Analysis Commenced : 24-Jan-2019
Issue Date : 31-Jan-2019 11:01



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|----------------------------------|---|
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Metals Team Leader | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m³ in-situ soil, multiply reported results x wet bulk density of soil in t/m³.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.

Client sample ID

| Sub-Matrix: SOIL
(Matrix: SOIL) | | | Client sample ID | QC155_230119 | CPT082_BH31_0.0 | CPT082_BH31_0.5 | CPT082_BH31_2.0 | CPT082_BH201_0.5 |
|--|------------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1900908-001 | EM1900908-006 | EM1900908-007 | EM1900908-010 | EM1900908-013 |
| | | | | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | 5.5 | 5.1 | 6.4 | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | ---- | ---- | 5.9 | 5.7 | 6.1 |
| Titration Actual Acidity (23F) | ---- | 2 | mole H+ / t | ---- | ---- | 4 | 6 | <2 |
| sulfidic - Titration Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | ---- | ---- | <0.02 | <0.02 | <0.02 |
| EA033-B: Potential Acidity | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | ---- | ---- | 0.007 | <0.005 | <0.005 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | ---- | ---- | <10 | <10 | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | ---- | ---- | 1.5 | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | ---- | ---- | <0.02 | <0.02 | <0.02 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | ---- | <10 | <10 | <10 |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | ---- | <1 | <1 | <1 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | ---- | <0.02 | <0.02 | <0.02 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | ---- | <10 | <10 | <10 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | ---- | <1 | <1 | <1 |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 16.2 | 16.5 | 18.3 | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | <5 | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | <1 | ---- | ---- |
| Chromium | 7440-47-3 | 2 | mg/kg | 34 | 29 | 35 | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | 11 | 16 | 12 | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | 8 | 7 | 6 | ---- | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | <2 | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | 16 | 12 | 16 | ---- | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | <5 | ---- | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | <2 | ---- | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | <5 | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | 8 | 7 | 5 | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | <0.1 | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | QC155_230119 | CPT082_BH31_0.0 | CPT082_BH31_0.5 | CPT082_BH31_2.0 | CPT082_BH201_0.5 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900908-001 | EM1900908-006 | EM1900908-007 | EM1900908-010 | EM1900908-013 |
| | | | | | Result | Result | Result | Result | Result |
| EG048: Hexavalent Chromium (Alkaline Digest) - Continued | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | 1 | 2 | 1 | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 280 | 220 | 210 | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | <0.1 | <0.1 | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | <1 | <1 | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | <0.4 | <0.4 | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | <0.04 | <0.04 | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | QC155_230119 | CPT082_BH31_0.0 | CPT082_BH31_0.5 | CPT082_BH31_2.0 | CPT082_BH201_0.5 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900908-001 | EM1900908-006 | EM1900908-007 | EM1900908-010 | EM1900908-013 |
| | | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | <0.02 | <0.02 | ---- | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | <1 | <1 | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | <1 | <1 | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | <1 | <1 | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | <1 | <1 | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | <1 | <1 | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | <5 | <5 | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | <5 | <5 | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | <5 | <5 | ---- | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | <5 | <5 | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | <5 | <5 | ---- | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | <1 | <1 | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | QC155_230119 | CPT082_BH31_0.0 | CPT082_BH31_0.5 | CPT082_BH31_2.0 | CPT082_BH201_0.5 |
|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900908-001 | EM1900908-006 | EM1900908-007 | EM1900908-010 | EM1900908-013 |
| | | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | 0.6 | 0.6 | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | 1.2 | 1.2 | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | QC155_230119 | CPT082_BH31_0.0 | CPT082_BH31_0.5 | CPT082_BH31_2.0 | CPT082_BH201_0.5 |
|--|--------------------------|-------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900908-001 | EM1900908-006 | EM1900908-007 | EM1900908-010 | EM1900908-013 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | | <0.05 | <0.05 | <0.05 | ---- | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | <0.03 | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | <10 | <10 | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | <50 | <50 | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | <10 | <10 | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | <100 | <100 | <100 | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | <100 | <100 | <100 | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | <50 | <50 | <50 | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | <50 | <50 | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | <100 | <100 | <100 | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | <100 | <100 | <100 | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | <50 | <50 | <50 | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | <50 | <50 | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | <10 | <10 | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 106 | 107 | 119 | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 80.8 | 82.6 | 86.0 | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 88.6 | 89.4 | 87.7 | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 91.2 | 87.9 | 91.6 | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 126 | 117 | 131 | ---- | ---- |



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|--|------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | QC155_230119 | CPT082_BH31_0.0 | CPT082_BH31_0.5 | CPT082_BH31_2.0 | CPT082_BH201_0.5 |
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900908-001 | EM1900908-006 | EM1900908-007 | EM1900908-010 | EM1900908-013 |
| | | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | | |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 103 | 98.3 | 107 | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | 120 | 126 | 132 | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | 116 | 115 | 122 | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | 111 | 110 | 113 | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | 127 | 125 | 133 | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | 120 | 118 | 124 | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | 115 | 114 | 119 | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT082_BH201_1.5 | CPT082_BH202_0.5 | CPT082_BH202_1.5 | CPT082_BH203_0.5 | CPT082_BH203_1.5 |
|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900908-015 | EM1900908-019 | EM1900908-021 | EM1900908-025 | EM1900908-027 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA029-A: pH Measurements | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | ---- | 5.9 | 5.3 | ---- | ---- | ---- |
| pH OX (23B) | ---- | 0.1 | pH Unit | ---- | 5.5 | 5.8 | ---- | ---- | ---- |
| EA029-B: Acidity Trail | | | | | | | | | |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | ---- | 4 | 13 | ---- | ---- | ---- |
| Titrateable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | ---- | 5 | 19 | ---- | ---- | ---- |
| Titrateable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | ---- | <2 | 5 | ---- | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.020 | % pyrite S | ---- | <0.020 | 0.021 | ---- | ---- | ---- |
| sulfidic - Titrateable Peroxide Acidity (s-23G) | ---- | 0.020 | % pyrite S | ---- | <0.020 | 0.030 | ---- | ---- | ---- |
| sulfidic - Titrateable Sulfidic Acidity (s-23H) | ---- | 0.020 | % pyrite S | ---- | <0.020 | <0.020 | ---- | ---- | ---- |
| EA029-C: Sulfur Trail | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.020 | % S | ---- | 0.020 | 0.042 | ---- | ---- | ---- |
| Peroxide Sulfur (23De) | ---- | 0.020 | % S | ---- | 0.037 | 0.048 | ---- | ---- | ---- |
| Peroxide Oxidisable Sulfur (23E) | ---- | 0.020 | % S | ---- | <0.020 | <0.020 | ---- | ---- | ---- |
| acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | ---- | 10 | <10 | ---- | ---- | ---- |
| EA029-D: Calcium Values | | | | | | | | | |
| KCl Extractable Calcium (23Vh) | ---- | 0.020 | % Ca | ---- | 0.286 | 0.263 | ---- | ---- | ---- |
| Peroxide Calcium (23Wh) | ---- | 0.020 | % Ca | ---- | 0.308 | 0.272 | ---- | ---- | ---- |
| Acid Reacted Calcium (23X) | ---- | 0.020 | % Ca | ---- | 0.022 | <0.020 | ---- | ---- | ---- |
| acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | ---- | 11 | <10 | ---- | ---- | ---- |
| sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.020 | % S | ---- | <0.020 | <0.020 | ---- | ---- | ---- |
| EA029-E: Magnesium Values | | | | | | | | | |
| KCl Extractable Magnesium (23Sm) | ---- | 0.020 | % Mg | ---- | 0.268 | 0.274 | ---- | ---- | ---- |
| Peroxide Magnesium (23Tm) | ---- | 0.020 | % Mg | ---- | 0.273 | 0.281 | ---- | ---- | ---- |
| Acid Reacted Magnesium (23U) | ---- | 0.020 | % Mg | ---- | <0.020 | <0.020 | ---- | ---- | ---- |
| Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | ---- | <10 | <10 | ---- | ---- | ---- |
| sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.020 | % S | ---- | <0.020 | <0.020 | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | ---- | 1.5 | 1.5 | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | ---- | 0.02 | 0.03 | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | ---- | 14 | 17 | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | ---- | 1 | 1 | ---- | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT082_BH201_1.5 | CPT082_BH202_0.5 | CPT082_BH202_1.5 | CPT082_BH203_0.5 | CPT082_BH203_1.5 |
|--|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900908-015 | EM1900908-019 | EM1900908-021 | EM1900908-025 | EM1900908-027 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA029-H: Acid Base Accounting - Continued | | | | | | | | | |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | ---- | 0.02 | 0.03 | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | ---- | 14 | 17 | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | ---- | 1 | 1 | ---- | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.3 | ---- | ---- | 5.8 | 5.4 | |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 12 | ---- | ---- | 4 | 11 | |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | <0.02 | <0.02 | |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | ---- | ---- | 0.006 | <0.005 | |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | <10 | <10 | |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | ---- | ---- | 1.5 | 1.5 | |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | <0.02 | <0.02 | |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 12 | ---- | ---- | <10 | 11 | |
| Liming Rate | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | <1 | <1 | |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | <0.02 | <0.02 | |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 12 | ---- | ---- | <10 | 11 | |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | <1 | <1 | |

EG048: Hexavalent Chromium (Alkaline Digest)



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|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT082_BH204_0.0 | CPT082_BH204_0.5 | CPT082_BH204_1.5 | ---- | ---- |
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900908-030 | EM1900908-031 | EM1900908-033 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) - Continued | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | <1 | ---- | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 300 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ----- | 0.1 | mg/kg | | <0.1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | ---- | ---- | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | 0.6 | ---- | ---- | ---- | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ----- | 0.2 | mg/kg | | 0.6 | ---- | ---- | ---- | ---- |
| ^ Total Xylenes | ----- | 0.5 | mg/kg | | 0.6 | ---- | ---- | ---- | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | ---- | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT082_BH204_0.0 | CPT082_BH204_0.5 | CPT082_BH204_1.5 | ---- | ---- |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900908-030 | EM1900908-031 | EM1900908-033 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | <1 | ---- | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | ---- | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | ---- | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | <1 | ---- | ---- | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | ---- | ---- |



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|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT082_BH204_0.0 | CPT082_BH204_0.5 | CPT082_BH204_1.5 | ---- | ---- |
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900908-030 | EM1900908-031 | EM1900908-033 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT082_BH204_0.0 | CPT082_BH204_0.5 | CPT082_BH204_1.5 | ---- | ---- |
|--|--------------------------|-------|-------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900908-030 | EM1900908-031 | EM1900908-033 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 102 | ---- | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 88.8 | ---- | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 96.9 | ---- | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 94.7 | ---- | ---- | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 125 | ---- | ---- | ---- | ---- | ---- |



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|---|------------|-------|------|-----------------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT082_BH204_0.0 | CPT082_BH204_0.5 | CPT082_BH204_1.5 | ---- | ---- |
| | | | | Client sampling date / time | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900908-030 | EM1900908-031 | EM1900908-033 | ----- | ----- |
| | | | | | Result | Result | Result | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | | |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 98.1 | ---- | ---- | ---- | ---- |
| 2.4.6-Tribromophenol | 118-79-6 | 0.025 | % | | 127 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | 116 | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | 106 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | 128 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | 121 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | 115 | ---- | ---- | ---- | ---- |



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|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC355_230119 | QC455_230119 | QC561_230119 | QC562_230119 | ---- |
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900908-002 | EM1900908-003 | EM1900908-004 | EM1900908-005 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 5.96 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | <0.005 | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | <0.004 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |



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|---|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC355_230119 | QC455_230119 | QC561_230119 | QC562_230119 | ---- |
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900908-002 | EM1900908-003 | EM1900908-004 | EM1900908-005 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP075(SIM)A: Phenolic Compounds | | | | | | | | | |
| Phenol | 108-95-2 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| 2-Chlorophenol | 95-57-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 2.0 | µg/L | <2.0 | ---- | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2.0 | µg/L | <2.0 | ---- | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |



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|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC355_230119 | QC455_230119 | QC561_230119 | QC562_230119 | ---- |
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900908-002 | EM1900908-003 | EM1900908-004 | EM1900908-005 | ----- |
| | | | | Result | Result | Result | Result | Result | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Benz(a)anthracene | 56-55-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 1.0 | µg/L | <1.0 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | <20 | <20 | <20 | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | <20 | <20 | <20 | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | <20 | <20 | <20 | <20 | <20 | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | <1 | <1 | <1 | ---- |
| Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | <2 | <2 | <2 | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | <2 | <2 | <2 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | <2 | <2 | <2 | <2 | <2 | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | <2 | <2 | <2 | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | <2 | <2 | <2 | <2 | <2 | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | <1 | <1 | <1 | <1 | <1 | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | <5 | <5 | <5 | ---- |



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|---|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC355_230119 | QC455_230119 | QC561_230119 | QC562_230119 | ---- |
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900908-002 | EM1900908-003 | EM1900908-004 | EM1900908-005 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP080: BTEXN - Continued | | | | | | | | | |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 74.4 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 93.6 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 101 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 110 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 28.4 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 58.0 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 45.1 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 65.8 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 87.9 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 78.2 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 104 | 103 | 101 | 91.9 | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 112 | 107 | 104 | 87.9 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 110 | 110 | 107 | 104 | ---- |



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| Sub-Matrix: SOIL | | □□□□ □ □□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

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| Sub-Matrix: WATER | | □□□□ □ □□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900908 | Page | : 1 of 8 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 1.0 | Date Received | : 23-Jan-2019 14:55 |
| Order number | : 60592634 1.0 | Date Analysed | : 24-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 31-Jan-2019 11:02 |
| No. of samples received | : 35 | | |
| No. of samples analysed | : 17 | Quote number | : EN/004/16 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | QC155_23011 | CPT082_BH31 | CPT082_BH31 | CPT082_BH20 | ---- |
|--|--------------|------|---------|----------------------|----------------------|---------------|---------------|----------------------|----------------------|-------------|-------------|------|
| | | | | 9 | _0.0 | | | _0.5 | 4_0.0 | | | |
| | | | | 23-Jan-2019
15:00 | 23-Jan-2019
15:00 | | | 23-Jan-2019
15:00 | 23-Jan-2019
15:00 | ---- | | |
| Sampling date/time | | | | □□ □□ | □□□□ | EM1900908-001 | EM1900908-006 | EM1900908-007 | EM1900908-030 | ----- | | |
| Compound | | | | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.5 | 5.1 | 6.4 | 5.3 | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | <5 | <5 | <5 | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 11 | 16 | 12 | 17 | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 8 | 7 | 6 | 8 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | 5 | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 16 | 12 | 16 | 17 | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 8 | 7 | 5 | 7 | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | 1 | 2 | 1 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 280 | 220 | 210 | 300 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | <0.2 | <0.2 | 0.6 | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | QC155_23011
9 | CPT082_BH31
_0.0 | CPT082_BH31
_0.5 | CPT082_BH20
4_0.0 | ---- |
|--|--------------|------|-------|------------------|--------------|----------------------|----------------------|----------------------|----------------------|-------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 23-Jan-2019
15:00 | 23-Jan-2019
15:00 | 23-Jan-2019
15:00 | 23-Jan-2019
15:00 | ---- |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1900908-001 | EM1900908-006 | EM1900908-007 | EM1900908-030 | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | <50 | <50 | <50 | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | QC155_23011 | CPT082_BH31 | CPT082_BH31 | CPT082_BH20 | ---- |
|--|--------------|------|---------|----------------------|----------------------|---------------|---------------|----------------------|----------------------|-------------|-------------|------|
| | | | | 9 | _0.0 | | | _0.5 | 4_0.0 | | | |
| | | | | 23-Jan-2019
15:00 | 23-Jan-2019
15:00 | | | 23-Jan-2019
15:00 | 23-Jan-2019
15:00 | ---- | | |
| Sampling date/time | | | | □□□ □□ | □□□□ □□ | EM1900908-001 | EM1900908-006 | EM1900908-007 | EM1900908-030 | ----- | | |
| Compound | Method | LOR | Unit | □□□ □□
□□□ □□ | □□□□ □□
□□□ □□ | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.5 | 5.1 | 6.4 | 5.3 | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 11 | 16 | 12 | 17 | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 8 | 7 | 6 | 8 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | 5 | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 16 | 12 | 16 | 17 | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 8 | 7 | 5 | 7 | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | 1 | 2 | 1 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 280 | 220 | 210 | 300 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | <0.2 | <0.2 | 0.6 | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| Sub-Matrix: SOIL | | | | Client sample ID | | QC155_23011
9 | CPT082_BH31
_0.0 | CPT082_BH31
_0.5 | CPT082_BH20
4_0.0 | ---- | | |
|---|--------------|------|-------|--------------------|--------|------------------|---------------------|---------------------|----------------------|------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | Compound | Method | | | | | | LOR | Unit |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | <0.05 | <0.05 | <0.05 | ---- | | |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | <10 | <10 | <10 | ---- | | |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | <50 | <50 | <50 | <50 | ---- | | |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | QC155_23011 | CPT082_BH31 | CPT082_BH31 | CPT082_BH20 | ---- |
|--|--------------|------|---------|----------------------|----------------------|---------------|---------------|----------------------|----------------------|-------------|-------------|------|
| | | | | 9 | _0.0 | | | _0.5 | 4_0.0 | | | |
| | | | | 23-Jan-2019
15:00 | 23-Jan-2019
15:00 | | | 23-Jan-2019
15:00 | 23-Jan-2019
15:00 | ---- | | |
| Sampling date/time | | | | □□ □□
□□ □ | □□□□
□□ □ | EM1900908-001 | EM1900908-006 | EM1900908-007 | EM1900908-030 | ----- | | |
| Compound | Method | LOR | Unit | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.5 | 5.1 | 6.4 | 5.3 | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | <5 | <5 | <5 | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 11 | 16 | 12 | 17 | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 8 | 7 | 6 | 8 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | 5 | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 16 | 12 | 16 | 17 | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 8 | 7 | 5 | 7 | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | 1 | 2 | 1 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 280 | 220 | 210 | 300 | ---- | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | <0.2 | <0.2 | 0.6 | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | | |
|---|--------------|------|-------|------------------|------|-------|----------------------|----------------------|----------------------|----------------------|-------|
| Sub-Matrix: SOIL | | | | Client sample ID | | | QC155_23011
9 | CPT082_BH31
_0.0 | CPT082_BH31
_0.5 | CPT082_BH20
4_0.0 | ---- |
| Sampling date/time | | | | | | | 23-Jan-2019
15:00 | 23-Jan-2019
15:00 | 23-Jan-2019
15:00 | 23-Jan-2019
15:00 | ---- |
| | | | | | | | EM1900908-001 | EM1900908-006 | EM1900908-007 | EM1900908-030 | ----- |
| Compound | Method | LOR | Unit | | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | <50 | <50 | <50 | <50 | ---- |

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900908 | Page | : 1 of 19 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 1.0 | Date Samples Received | : 23-Jan-2019 |
| Order number | : 60592634 1.0 | Date Analysis Commenced | : 24-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 31-Jan-2019 |
| Sampler | : [REDACTED] | | |
| Site | : ---- | | |
| Quote number | : EN/004/16 | | |
| No. of samples received | : 35 | | |
| No. of samples analysed | : 17 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□□□ □□ □□

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

□□□□□

Senior Inorganic Chemist
Metals Team Leader
Senior Inorganic Chemist
Senior Acid Sulfate Soil Chemist
Senior Organic Chemist

□□□□□□ □□□ □

Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Brisbane Acid Sulphate Soils, Stafford, QLD
Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2156250) | | | | | | | | | |
| EM1900814-001 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 7.7 | 7.9 | 2.56 | 0% - 20% |
| EM1900894-002 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 7.5 | 7.6 | 1.32 | 0% - 20% |
| EA029-A: pH Measurements (QC Lot: 2159411) | | | | | | | | | |
| EM1900908-019 | CPT082_BH202_0.5 | EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | 5.9 | 6.0 | 1.68 | 0% - 20% |
| | | EA029: pH OX (23B) | ---- | 0.1 | pH Unit | 5.5 | 5.4 | 0.00 | 0% - 20% |
| EA029-B: Acidity Trail (QC Lot: 2159411) | | | | | | | | | |
| EM1900908-019 | CPT082_BH202_0.5 | EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 4 | 3 | 0.00 | No Limit |
| | | EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | 5 | 6 | 0.00 | No Limit |
| | | EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | <2 | 2 | 0.00 | No Limit |
| EA029-C: Sulfur Trail (QC Lot: 2159411) | | | | | | | | | |
| EM1900908-019 | CPT082_BH202_0.5 | EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | 0.020 | 0.022 | 7.42 | No Limit |
| | | EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | 0.037 | 0.036 | 0.00 | No Limit |
| | | EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | 10 | <10 | 0.00 | No Limit |
| EA029-D: Calcium Values (QC Lot: 2159411) | | | | | | | | | |
| EM1900908-019 | CPT082_BH202_0.5 | EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | 0.286 | 0.301 | 5.22 | 0% - 50% |
| | | EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | 0.308 | 0.326 | 5.65 | 0% - 50% |
| | | EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | 0.022 | 0.025 | 11.1 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA029-D: Calcium Values (QC Lot: 2159411) - continued | | | | | | | | | |
| EM1900908-019 | CPT082_BH202_0.5 | EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | 11 | 12 | 11.1 | No Limit |
| EA029-E: Magnesium Values (QC Lot: 2159411) | | | | | | | | | |
| EM1900908-019 | CPT082_BH202_0.5 | EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | 0.268 | 0.272 | 1.33 | 0% - 50% |
| | | EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | 0.273 | 0.287 | 5.03 | 0% - 50% |
| | | EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | 12 | 19.4 | No Limit |
| EA029-H: Acid Base Accounting (QC Lot: 2159411) | | | | | | | | | |
| EM1900908-019 | CPT082_BH202_0.5 | EA029: ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 0.00 | No Limit |
| | | EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.02 | <0.02 | 0.00 | No Limit |
| | | EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.02 | <0.02 | 0.00 | No Limit |
| | | EA029: Liming Rate | ---- | 1 | kg CaCO3/t | 1 | <1 | 0.00 | No Limit |
| | | EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 1 | <1 | 0.00 | No Limit |
| | | EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 14 | 12 | 13.8 | No Limit |
| | | EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 14 | 12 | 13.8 | No Limit |
| EA033-A: Actual Acidity (QC Lot: 2158321) | | | | | | | | | |
| EB1901331-001 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.02 | 0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 15 | 16 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 4.7 | 4.7 | 0.00 | 0% - 20% |
| EM1900717-003 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 6.0 | 6.3 | 4.88 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2158324) | | | | | | | | | |
| EM1900908-013 | CPT082_BH201_0.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 6.1 | 6.2 | 1.63 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2158321) | | | | | | | | | |
| EB1901331-001 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.014 | 0.013 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EM1900717-003 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.474 | 0.472 | 0.417 | 0% - 20% |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | 296 | 294 | 0.417 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2158324) | | | | | | | | | |
| EM1900908-013 | CPT082_BH201_0.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | <0.005 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA033-B: Potential Acidity (QC Lot: 2158324) - continued | | | | | | | | | |
| EM1900908-013 | CPT082_BH201_0.5 | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2157017) | | | | | | | | | |
| EM1900908-001 | QC155_230119 | EA055: Moisture Content | ---- | 0.1 | % | 16.2 | 16.8 | 3.69 | 0% - 50% |
| EM1900952-004 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 1.5 | 1.1 | 35.7 | No Limit |
| EG005T: Total Metals by ICP-AES (QC Lot: 2155938) | | | | | | | | | |
| EM1900606-107 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Chromium | 7440-47-3 | 2 | mg/kg | 56 | 68 | 18.1 | 0% - 20% |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | 2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 20 | 20 | 0.00 | 0% - 50% |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 6 | 7 | 24.0 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 103 | 112 | 8.66 | 0% - 20% |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 13 | 14 | 11.8 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900895-002 | Anonymous | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 83 | 93 | 11.4 | 0% - 50% |
| | | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Chromium | 7440-47-3 | 2 | mg/kg | <2 | 3 | 45.1 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 3 | 9 | 86.5 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 6 | 7 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 6 | 6 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900606-107 | Anonymous | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 13 | 13 | 0.00 | No Limit |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2155937) | | | | | | | | | |
| EM1900606-107 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900895-002 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2155022) | | | | | | | | | |
| EM1900726-007 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900895-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2155477) | | | | | | | | | |
| EM1900730-002 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | 1 | 1 | 0.00 | No Limit |
| EM1900895-004 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2156069) | | | | | | | | | |
| EM1900814-014 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 880 | 800 | 10.0 | 0% - 20% |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | | | |
|--|------------------|--|------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|------|----------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) | | |
| EK040T: Fluoride Total (QC Lot: 2156069) - continued | | | | | | | | | | | |
| EM1900895-003 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 110 | 100 | 0.00 | No Limit | | |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2153498) | | | | | | | | | | | |
| EM1900908-001 | QC155_230119 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2153455) | | | | | | | | | | | |
| EM1900810-001 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit | | |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| | | | 106-42-3 | | | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| EP074H: Naphthalene (QC Lot: 2153455) | | | | | | | | | | | |
| EM1900810-001 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit | | |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2153455) | | | | | | | | | | | |
| EM1900810-001 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit | | |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit | | |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit | | |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit | | |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit | | |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit | | |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit | | |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit | | |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit | | |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit | | |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit | | |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit | | |
| | | EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit | | |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit | | |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit | | |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit | | |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit | | |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit | | |
| | | | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| | | EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2153496) | | | | | | | | | |
| EM1900908-001 | QC155_230119 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit | | |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit | | |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit | | |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit | | |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2153496) - continued | | | | | | | | | |
| EM1900908-001 | QC155_230119 | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2153496) | | | | | | | | | |
| EM1900908-001 | QC155_230119 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2153496) | | | | | | | | | |
| EM1900908-001 | QC155_230119 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenzo(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2153496) | | | | | | | | | |
| EM1900908-001 | QC155_230119 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2153496) - continued | | | | | | | | | |
| EM1900908-001 | QC155_230119 | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2153455) | | | | | | | | | |
| EM1900810-001 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2153497) | | | | | | | | | |
| EM1900908-001 | QC155_230119 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2153455) | | | | | | | | | |
| EM1900810-001 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2153497) | | | | | | | | | |
| EM1900908-001 | QC155_230119 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2155227) | | | | | | | | | |
| EM1900914-001 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 8.33 | 8.30 | 0.361 | 0% - 20% |
| EM1900896-001 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 8.11 | 8.11 | 0.00 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2153571) | | | | | | | | | |
| ET1900189-003 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | 0.0006 | 0.0004 | 32.7 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.040 | 0.039 | 0.00 | 0% - 20% |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.114 | 0.114 | 0.00 | 0% - 20% |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 3.10 | 3.19 | 2.76 | 0% - 20% |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.014 | 0.013 | 0.00 | 0% - 50% |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2153571) - continued | | | | | | | | | |
| ET1900189-003 | Anonymous | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.073 | 0.073 | 0.00 | 0% - 50% |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900880-008 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.002 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.003 | 0.003 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | 0.01 | <0.01 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2153574) | | | | | | | | | |
| EM1900908-002 | QC355_230119 | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2153572) | | | | | | | | | |
| ET1900189-009 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900880-008 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2159316) | | | | | | | | | |
| EM1900908-002 | QC355_230119 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1901008-008 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2155406) | | | | | | | | | |
| EM1900908-002 | QC355_230119 | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2155229) | | | | | | | | | |
| EM1900923-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.6 | 0.6 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2155114) | | | | | | | | | |
| EM1900908-002 | QC355_230119 | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2155114) | | | | | | | | | |
| EM1900908-002 | QC355_230119 | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|-------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2155114) - continued | | | | | | | | | |
| EM1900908-002 | QC355_230119 | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2155114) | | | | | | | | | |
| EM1900908-002 | QC355_230119 | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2155114) | | | | | | | | | |
| EM1900908-002 | QC355_230119 | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2155113) | | | | | | | | | |
| EM1900922-002 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900908-002 | QC355_230119 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2155113) | | | | | | | | | |
| EM1900922-002 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900908-002 | QC355_230119 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2155113) | | | | | | | | | |
| EM1900922-002 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EM1900908-002 | QC355_230119 | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------------|-----------------------------|---------------------------------------|------------------------|---------------------------|---------------------------------|
| Method: Compound | CAS Number | LOR | Unit | | Result | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High |
| EA029-A: pH Measurements (QCLot: 2159411) | | | | | | | | |
| EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA029: pH OX (23B) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 95.6 | 70 | 130 |
| EA029-B: Acidity Trail (QCLot: 2159411) | | | | | | | | |
| EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 88.3 | 70 | 130 |
| EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | <2 | 29.1 mole H+ / t | 98.1 | 70 | 130 |
| EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | <2 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-C: Sulfur Trail (QCLot: 2159411) | | | | | | | | |
| EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | 0.052 % S | 92.8 | 70 | 130 |
| EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | <0.020 | 0.145 % S | 92.5 | 70 | 130 |
| EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029-D: Calcium Values (QCLot: 2159411) | | | | | | | | |
| EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | <0.020 | 0.151 % Ca | 106 | 70 | 130 |
| EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | <0.020 | 0.296 % Ca | 90.0 | 70 | 130 |
| EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-E: Magnesium Values (QCLot: 2159411) | | | | | | | | |
| EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | <0.020 | 0.176 % Mg | 96.2 | 70 | 130 |
| EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | <0.020 | 0.175 % Mg | 99.6 | 70 | 130 |
| EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | ---- | ---- | ---- | ---- |
| EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting (QCLot: 2159411) | | | | | | | | |
| EA029: ANC Fineness Factor | ---- | 0.5 | - | <0.5 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA033-A: Actual Acidity (QCLot: 2158321) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 88.9 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-A: Actual Acidity (QCLot: 2158324) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 90.9 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2158321) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 96.0 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2158324) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 97.2 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES (QCLot: 2155938) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 90.8 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 94.6 | 76 | 108 |
| EG005T: Chromium | 7440-47-3 | 2 | mg/kg | <2 | 43.9 mg/kg | 100 | 78 | 110 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 86.3 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 90.5 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 103 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 101 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 103 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 81.0 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 104 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 99.5 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2155937) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 100 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2155022) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 93.5 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2155477) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 105 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2156069) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 106 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2153498) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 116 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2153455) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 92.8 | 68 | 117 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2153455) - continued | | | | | | | | |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 89.3 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 90.4 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 88.4 | 66 | 115 |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 89.0 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 88.9 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2153455) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 90.4 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2153455) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 88.7 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 79.1 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 79.9 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 78.0 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 89.0 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 85.2 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 87.9 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 85.2 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 87.6 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.8 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 93.1 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.2 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 86.4 | 71 | 118 |
| EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 90.1 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.5 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.3 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 90.3 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 94.2 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 86.7 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2153496) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 91.6 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 100.0 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 116 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 111 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 121 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 120 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 100 | 65 | 124 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 101 | 64 | 128 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2153496) - continued | | | | | | | | |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 112 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2153496) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 94.0 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 95.8 | 65 | 126 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 96.5 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 100 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 92.9 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 122 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 107 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | # 126 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 118 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 104 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2153496) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 106 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 124 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 112 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 114 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 58.9 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 121 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 122 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 123 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 115 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 112 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 131 | 72 | 134 |
| EP075-EM: Dibenzo(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 130 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 133 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2153496) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 101 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 92.6 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 102 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 112 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 111 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 106 | 73 | 129 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-----------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2153496) - continued | | | | | | | | |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 102 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 101 | 64 | 137 |
| EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 111 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 109 | 72 | 132 |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 113 | 42 | 160 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 90.4 | 55 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 118 | 73 | 132 |
| EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 123 | 75 | 134 |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 118 | 73 | 133 |
| EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 128 | 67 | 133 |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 129 | 67 | 135 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2153455) | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 80.7 | 63 | 122 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2153497) | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 105 | 70 | 120 |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 109 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 100 | 77 | 117 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2153455) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 77.9 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTE
X | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2153497) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 107 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 107 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 102 | 68 | 124 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|--------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
LowHigh | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2153571) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 101 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 93.1 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.1 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 97.0 | 83 | 105 |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 99.8 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.5 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 91.2 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 83 | 109 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2153571) - continued | | | | | | | | |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 103 | 85 | 109 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2153574) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 101 | 84 | 116 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2153572) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 88.8 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2159316) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 101 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2155406) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 105 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2155229) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 103 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2153679) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 95.9 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2155114) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 88.7 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2155114) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 82.4 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 84.1 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 93.3 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 85.2 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 89.3 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 85.1 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 81.1 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 92.9 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 85.9 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 94.2 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 84.6 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 88.2 | 76 | 112 |
| EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 94.5 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 82.4 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2155114) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 90.2 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 84.3 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 88.0 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 78.2 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2155114) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 89.1 | 79 | 117 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------|------|--------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP075(SIM)A: Phenolic Compounds (QCLot: 2153680) | | | | | | | | |
| EP075(SIM): Phenol | 108-95-2 | 1 | µg/L | <1.0 | 5 µg/L | 41.2 | 20 | 51 |
| EP075(SIM): 2-Chlorophenol | 95-57-8 | 1 | µg/L | <1.0 | 5 µg/L | 79.7 | 46 | 103 |
| EP075(SIM): 2-Methylphenol | 95-48-7 | 1 | µg/L | <1.0 | 5 µg/L | 74.7 | 43 | 98 |
| EP075(SIM): 3- & 4-Methylphenol | 1319-77-3 | 2 | µg/L | <2.0 | 10 µg/L | 67.2 | 41 | 90 |
| EP075(SIM): 2-Nitrophenol | 88-75-5 | 1 | µg/L | <1.0 | 5 µg/L | 94.5 | 44 | 114 |
| EP075(SIM): 2,4-Dimethylphenol | 105-67-9 | 1 | µg/L | <1.0 | 5 µg/L | 81.5 | 43 | 115 |
| EP075(SIM): 2,4-Dichlorophenol | 120-83-2 | 1 | µg/L | <1.0 | 5 µg/L | 83.9 | 48 | 111 |
| EP075(SIM): 2,6-Dichlorophenol | 87-65-0 | 1 | µg/L | <1.0 | 5 µg/L | 85.2 | 50 | 116 |
| EP075(SIM): 4-Chloro-3-methylphenol | 59-50-7 | 1 | µg/L | <1.0 | 5 µg/L | 94.6 | 49 | 110 |
| EP075(SIM): 2,4,6-Trichlorophenol | 88-06-2 | 1 | µg/L | <1.0 | 5 µg/L | 84.3 | 48 | 113 |
| EP075(SIM): 2,4,5-Trichlorophenol | 95-95-4 | 1 | µg/L | <1.0 | 5 µg/L | 91.4 | 47 | 115 |
| EP075(SIM): Pentachlorophenol | 87-86-5 | 2 | µg/L | <2.0 | 10 µg/L | 63.5 | 48 | 130 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2153680) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 81.9 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 89.1 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 86.5 | 53 | 117 |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 93.3 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 96.1 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 97.5 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 100 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 99.8 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 93.5 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 97.8 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | 5 µg/L | 98.6 | 56 | 131 |
| | 205-82-3 | | | | | | | |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 105 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 98.6 | 54 | 124 |
| EP075(SIM): Indeno(1,2,3-cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 94.2 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 97.1 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 94.1 | 56 | 124 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2153681) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 50.8 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 59.3 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 59.9 | 55 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2155113) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 104 | 65 | 126 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2153681) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 57.3 | 53 | 129 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2153681) - continued | | | | | | | | |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 59.4 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 59.4 | 53 | 136 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2155113) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 102 | 64 | 124 |
| EP080: BTEXN (QCLot: 2155113) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 90.2 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 96.1 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 96.7 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 106 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 106 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 94.7 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------|-----------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2155938) | | | | | | | |
| EM1900606-124 | Anonymous | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 89.8 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 92.2 | 84 | 116 |
| | | EG005T: Chromium | 7440-47-3 | 50 mg/kg | 92.4 | 79 | 121 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 114 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 78.1 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 88.8 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 91.9 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 79.6 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | # Not Determined | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2155937) | | | | | | | |
| EM1900606-124 | Anonymous | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 108 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2155022) | | | | | | | |
| EM1900730-002 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | 66.8 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2155477) | | | | | | | |
| EM1900730-004 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 111 | 77 | 113 |



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EK040T: Fluoride Total (QCLot: 2156069) | | | | | | | |
| EM1900814-015 | Anonymous | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 95.0 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2153498) | | | | | | | |
| EM1900908-030 | CPT082_BH204_0.0 | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 126 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2153455) | | | | | | | |
| EM1900810-009 | Anonymous | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 84.6 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 91.1 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2153455) | | | | | | | |
| EM1900810-009 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 88.9 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 81.4 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 83.3 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2153496) | | | | | | | |
| EM1900908-006 | CPT082_BH31_0.0 | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 110 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 137 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 138 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2153496) | | | | | | | |
| EM1900908-006 | CPT082_BH31_0.0 | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 113 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 113 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2153496) | | | | | | | |
| EM1900908-006 | CPT082_BH31_0.0 | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 125 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 136 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2153455) | | | | | | | |
| EM1900810-009 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 71.9 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2153497) | | | | | | | |
| EM1900908-007 | CPT082_BH31_0.5 | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 102 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 109 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 99.8 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2153455) | | | | | | | |
| EM1900810-009 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 71.0 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2153497) | | | | | | | |
| EM1900908-007 | CPT082_BH31_0.5 | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 105 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 107 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 100.0 | 44 | 126 |

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|----------------------|------------------|------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|-----------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2153571) | | | | | | | |
| EM1900880-008 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 103 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 90.7 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 89.2 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 90.0 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 94.6 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 90.7 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2153572) | | | | | | | |
| EM1900908-002 | QC355_230119 | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 90.4 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2159316) | | | | | | | |
| EM1900977-043 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 103 | 59 | 127 |
| EK040P: Fluoride by PC Titrator (QCLot: 2155229) | | | | | | | |
| EM1900923-002 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 88.4 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2155114) | | | | | | | |
| EM1900908-002 | QC355_230119 | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 96.2 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 82.4 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2155114) | | | | | | | |
| EM1900908-002 | QC355_230119 | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 87.1 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2155113) | | | | | | | |
| EM1900908-002 | QC355_230119 | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 81.8 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2155113) | | | | | | | |
| EM1900908-002 | QC355_230119 | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 80.2 | 44 | 122 |
| EP080: BTEXN (QCLot: 2155113) | | | | | | | |
| EM1900908-002 | QC355_230119 | EP080: Benzene | 71-43-2 | 20 µg/L | 103 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 96.3 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : EM1900908

Page : 1 of 14

Client : AECOM Australia Pty Ltd

Contact : [REDACTED]

Project : 60592634 1.0

Site : [REDACTED]

Sampler : [REDACTED]

Order number : 60592634 1.0

Laboratory : Environmental Division Melbourne

Telephone : +6138549 9645

Date Samples Received : 23-Jan-2019

Issue Date : 31-Jan-2019

No. of samples received : 35

No. of samples analysed : 17

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|-----------------------------------|------------|----------------|---------|--|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | QC-2153496-001 | ---- | 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 126 % | 47-125% | Recovery greater than upper control limit |
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG005T: Total Metals by ICP-AES | EM1900606--124 | Anonymous | Zinc | 7440-66-6 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|---|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
QC355_230119 | ---- | ---- | ---- | 25-Jan-2019 | 23-Jan-2019 | 2 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|--|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 6 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 1 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 6 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 6 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 6 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 29-Jan-2019 | 29-Jan-2019 | ✓ |
| EA029-A: pH Measurements | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT082_BH202_0.5, | CPT082_BH202_1.5 | 23-Jan-2019 | 30-Jan-2019 | 18-Oct-2021 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |
| EA029-B: Acidity Trail | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT082_BH202_0.5, | CPT082_BH202_1.5 | 23-Jan-2019 | 30-Jan-2019 | 18-Oct-2021 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |
| EA029-C: Sulfur Trail | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT082_BH202_0.5, | CPT082_BH202_1.5 | 23-Jan-2019 | 30-Jan-2019 | 18-Oct-2021 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |
| EA029-D: Calcium Values | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT082_BH202_0.5, | CPT082_BH202_1.5 | 23-Jan-2019 | 30-Jan-2019 | 18-Oct-2021 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |
| EA029-E: Magnesium Values | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT082_BH202_0.5, | CPT082_BH202_1.5 | 23-Jan-2019 | 30-Jan-2019 | 18-Oct-2021 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |
| EA029-F: Excess Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT082_BH202_0.5, | CPT082_BH202_1.5 | 23-Jan-2019 | 30-Jan-2019 | 18-Oct-2021 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |
| EA029-G: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT082_BH202_0.5, | CPT082_BH202_1.5 | 23-Jan-2019 | 30-Jan-2019 | 18-Oct-2021 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |
| EA029-H: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT082_BH202_0.5, | CPT082_BH202_1.5 | 23-Jan-2019 | 30-Jan-2019 | 18-Oct-2021 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT082_BH31_0.5,
CPT082_BH201_0.5,
CPT082_BH203_0.5,
CPT082_BH204_0.5, | CPT082_BH31_2.0,
CPT082_BH201_1.5,
CPT082_BH203_1.5,
CPT082_BH204_1.5 | 23-Jan-2019 | 30-Jan-2019 | 23-Jan-2020 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT082_BH31_0.5,
CPT082_BH201_0.5,
CPT082_BH203_0.5,
CPT082_BH204_0.5, | CPT082_BH31_2.0,
CPT082_BH201_1.5,
CPT082_BH203_1.5,
CPT082_BH204_1.5 | 23-Jan-2019 | 30-Jan-2019 | 23-Jan-2020 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|--|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT082_BH31_0.5,
CPT082_BH201_0.5,
CPT082_BH203_0.5,
CPT082_BH204_0.5, | CPT082_BH31_2.0,
CPT082_BH201_1.5,
CPT082_BH203_1.5,
CPT082_BH204_1.5 | 23-Jan-2019 | 30-Jan-2019 | 23-Jan-2020 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT082_BH31_0.5,
CPT082_BH201_0.5,
CPT082_BH203_0.5,
CPT082_BH204_0.5, | CPT082_BH31_2.0,
CPT082_BH201_1.5,
CPT082_BH203_1.5,
CPT082_BH204_1.5 | 23-Jan-2019 | 30-Jan-2019 | 23-Jan-2020 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT082_BH31_0.5,
CPT082_BH201_0.5,
CPT082_BH203_0.5,
CPT082_BH204_0.5, | CPT082_BH31_2.0,
CPT082_BH201_1.5,
CPT082_BH203_1.5,
CPT082_BH204_1.5 | 23-Jan-2019 | 30-Jan-2019 | 23-Jan-2020 | ✓ | 30-Jan-2019 | 30-Apr-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | ---- | ---- | ---- | 26-Jan-2019 | 06-Feb-2019 | ✓ |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 26-Jan-2019 | 22-Jul-2019 | ✓ | 30-Jan-2019 | 22-Jul-2019 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 26-Jan-2019 | 20-Feb-2019 | ✓ | 30-Jan-2019 | 20-Feb-2019 | ✓ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 25-Jan-2019 | 20-Feb-2019 | ✓ | 29-Jan-2019 | 01-Feb-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 25-Jan-2019 | 06-Feb-2019 | ✓ | 29-Jan-2019 | 08-Feb-2019 | ✓ |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 25-Jan-2019 | 20-Feb-2019 | ✓ | 29-Jan-2019 | 20-Feb-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--------------------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 24-Jan-2019 | 06-Feb-2019 | ✓ | 25-Jan-2019 | 05-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 24-Jan-2019 | 30-Jan-2019 | ✓ | 25-Jan-2019 | 30-Jan-2019 | ✓ |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 24-Jan-2019 | 30-Jan-2019 | ✓ | 25-Jan-2019 | 30-Jan-2019 | ✓ |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 24-Jan-2019 | 30-Jan-2019 | ✓ | 25-Jan-2019 | 30-Jan-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 24-Jan-2019 | 06-Feb-2019 | ✓ | 25-Jan-2019 | 05-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 24-Jan-2019 | 06-Feb-2019 | ✓ | 25-Jan-2019 | 05-Mar-2019 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 24-Jan-2019 | 06-Feb-2019 | ✓ | 25-Jan-2019 | 05-Mar-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 24-Jan-2019 | 06-Feb-2019 | ✓ | 25-Jan-2019 | 05-Mar-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 24-Jan-2019 | 30-Jan-2019 | ✓ | 25-Jan-2019 | 30-Jan-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
QC155_230119,
CPT082_BH31_0.5, | CPT082_BH31_0.0,
CPT082_BH204_0.0 | 23-Jan-2019 | 24-Jan-2019 | 30-Jan-2019 | ✓ | 25-Jan-2019 | 30-Jan-2019 | ✓ |

Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
QC355_230119 | 23-Jan-2019 | ---- | ---- | ---- | 25-Jan-2019 | 23-Jan-2019 | ✖ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Natural (EG020B-F)
QC355_230119 | 23-Jan-2019 | ---- | ---- | ---- | 25-Jan-2019 | 22-Jul-2019 | ✓ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Natural (EG035F)
QC355_230119 | 23-Jan-2019 | ---- | ---- | ---- | 30-Jan-2019 | 20-Feb-2019 | ✓ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Opaque plastic bottle - NaOH (EG050F)
QC355_230119 | 23-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 20-Feb-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| Opaque plastic bottle - NaOH (EK026SF)
QC355_230119 | 23-Jan-2019 | ---- | ---- | ---- | 25-Jan-2019 | 06-Feb-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
QC355_230119 | 23-Jan-2019 | ---- | ---- | ---- | 25-Jan-2019 | 20-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
QC355_230119 | 23-Jan-2019 | 25-Jan-2019 | 30-Jan-2019 | ✓ | 29-Jan-2019 | 06-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC355_230119 | 23-Jan-2019 | 25-Jan-2019 | 06-Feb-2019 | ✓ | 25-Jan-2019 | 06-Feb-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC355_230119 | 23-Jan-2019 | 25-Jan-2019 | 06-Feb-2019 | ✓ | 25-Jan-2019 | 06-Feb-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC355_230119 | 23-Jan-2019 | 25-Jan-2019 | 06-Feb-2019 | ✓ | 25-Jan-2019 | 06-Feb-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC355_230119 | 23-Jan-2019 | 25-Jan-2019 | 06-Feb-2019 | ✓ | 25-Jan-2019 | 06-Feb-2019 | ✓ |
| EP075(SIM)A: Phenolic Compounds | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
QC355_230119 | 23-Jan-2019 | 25-Jan-2019 | 30-Jan-2019 | ✓ | 29-Jan-2019 | 06-Mar-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
QC355_230119 | 23-Jan-2019 | 25-Jan-2019 | 30-Jan-2019 | ✓ | 29-Jan-2019 | 06-Mar-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC355_230119 | | 23-Jan-2019 | 25-Jan-2019 | 30-Jan-2019 | ✓ | 29-Jan-2019 | 06-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC355_230119, QC455_230119,
QC561_230119, QC562_230119 | | 23-Jan-2019 | 25-Jan-2019 | 06-Feb-2019 | ✓ | 25-Jan-2019 | 06-Feb-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC355_230119 | | 23-Jan-2019 | 25-Jan-2019 | 30-Jan-2019 | ✓ | 29-Jan-2019 | 06-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC355_230119, QC455_230119,
QC561_230119, QC562_230119 | | 23-Jan-2019 | 25-Jan-2019 | 06-Feb-2019 | ✓ | 25-Jan-2019 | 06-Feb-2019 | ✓ |
| EP080: BTEXN | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC355_230119, QC455_230119,
QC561_230119, QC562_230119 | | 23-Jan-2019 | 25-Jan-2019 | 06-Feb-2019 | ✓ | 25-Jan-2019 | 06-Feb-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 3 | 26 | 11.54 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 18 | 11.11 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 15 | 13.33 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 4 | 25.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 4 | 25.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 2 | 50.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 15 | 13.33 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 4 | 25.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 8 | 12.50 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 26 | 7.69 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 18 | 11.11 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 2 | 50.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 15 | 6.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 8 | 12.50 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 26 | 7.69 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 2 | 50.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 15 | 6.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 8 | 12.50 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 15 | 6.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 8 | 12.50 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 2 | 14 | 14.29 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 19 | 10.53 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 1 | 100.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 8 | 12.50 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 2 | 11 | 18.18 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 6 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 2 | 15 | 13.33 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 1 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 1 | 100.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 6 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 3 | 33.33 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 14 | 7.14 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 1 | 100.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 8 | 12.50 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 6 | 16.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 1 | 100.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 1 | 100.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| TRH - Semivolatile Fraction | EP071 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 6 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 1 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 0 | 1 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 6 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|---------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | SOIL | In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|---|
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazine. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|--|------------|--------|--|
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |

| Preparation Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|---|
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |




| Preparation Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|--|
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

ANZ
FCM - Generic Chain of Custody Form

| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: PAPPY | | Destination Laboratory | |
|--|------------------|-------------------|---------|--|------------------|------------------------|--|
| PROJECT MANAGER (PM): | | SITE: | | MOBILE: | | ALS | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| <p>FOR LABORATORY USE ONLY</p> <p>COOLER SEAL (once appropriate)</p> <p>Inspected: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A</p> <p>SAMPLE TEMPERATURE</p> <p>CHILLED: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> | | | | | | | |
| <p>COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:</p> | | | | | | | |
| <p>CONTAINER INFORMATION</p> <p>ALS ID MATRIX DATE Time Type / Code Total bottles</p> | | | | | | | |
| 1 | CPT111-BH42-0.0 | S | 14/1/19 | 8:40 | 1X SAR, 1X A.S.S | 2 | |
| 2 | CPT111-BH42-0.5 | S | | 8:45 | | | |
| 3 | CPT111-BH42-1.0 | S | | 8:50 | | | |
| 4 | CPT111-BH42-1.5 | S | | 8:55 | | | |
| 5 | CPT111-BH42-2.0 | S | | 9:00 | | | |
| 6 | CPT111-BH42-2.5 | S | | 9:10 | | | |
| 7 | CPT099-BH37-0.0 | S | | 10:00 | | | |
| 8 | CPT099-BH37-0.5 | S | | 10:05 | | | |
| 9 | CPT099-BH37-1.0 | S | | 10:10 | | | |
| 10 | CPT099-BH37-1.5 | S | | 10:15 | | | |
| 11 | CPT077-BH37-2.0 | S | | 10:20 | | | |
| 12 | CPT077-BH37-2.5 | S | | 10:20 | 1X A.S.S | | |
| 13 | CPT093-BH27-0.0 | S | | 11:20 | | | |
| 14 | CPT093-BH27-0.5 | S | | 11:25 | | | |
| 15 | CPT093-BH27-1.0 | S | | 11:30 | | | |
| 16 | CPT093-BH27-1.5 | S | | 11:35 | | | |
| 17 | CPT093-BH27-2.0 | S | | 11:40 | | | |
| 18 | CPT093-BH27-2.5 | S | | 11:45 | | | |
| 19 | CPT092-BH223-0.0 | S | | 11:30 | | | |

Environmental Division
Melbourne
Work Order Reference
EM1900977



Telephone : +61-3-8649 9800

Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LOEs etc.

Hold ☒ A.S.S. to be for 30

| RECEIVED BY: | | RECEIVED BY: | |
|--------------|---------|--------------|---------|
| Name: | Date: | Name: | Date: |
| PAPPY | 24/1/19 | ALS | 24/1/19 |
| ALS | 14:30 | ALS | 14:35 |

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Sulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial; SG = Sulfuric Preserved Plastic; H = HCl Preserved Plastic; HS = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic
F = Formaldehyde Preserved Plastic; Z = Zinc Acetate Preserved Plastic; E = EDTA Preserved Plastic; ST = Stainle Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Method of Shipment: ☒ Cont. Note No: ☐ Transport Co: ☐

COC Page 1 of 3

ANZ
FCM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

| CONSULTANT: AECOM | | ADDRESS / OFFICE: | | SAMPLER: | | Destination Laboratory | |
|---|------------------|---|---------|---|-------------|---|--|
| PROJECT MANAGER (PM): | | SITE: | | MOBILE: | | A25 | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | |
| COOLER SEAL (this is optional) | | | | | | | |
| Bottle: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | |
| SAMPLE INFORMATION (note S = Soil, V = Vial) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 20 | CP1092-BH223-0.5 | S | 24/1/19 | 11:40 | 1X A-S-S | 1 | |
| 21 | CP1092-BH223-1.0 | S | | 11:50 | | | |
| 22 | CP1092-BH223-1.5 | S | | 11:55 | | | |
| 23 | CP1092-BH223-2.0 | S | | 12:00 | | | |
| 24 | CP1092-BH223-2.5 | S | | 12:10 | | | |
| 25 | CP1092-BH224-0.0 | S | | 12:30 | | | |
| 26 | CP1092-BH224-0.5 | S | | 12:35 | | | |
| 27 | CP1092-BH224-1.0 | S | | 12:40 | | | |
| 28 | CP1092-BH224-1.5 | S | | 12:45 | | | |
| 29 | CP1092-BH224-2.0 | S | | 12:50 | | | |
| 30 | CP1092-BH224-2.5 | S | | 13:00 | | | |
| 31 | CP1093-BH225-0.0 | S | | | | | |
| 32 | CP1093-BH225-0.5 | S | | | | | |
| 33 | CP1093-BH225-1.0 | S | | | | | |
| 34 | CP1093-BH225-1.5 | S | | | | | |
| 35 | CP1093-BH225-2.0 | S | | | | | |
| 36 | CP1093-BH225-2.5 | S | | | | | |
| 37 | CP1093-BH226-0.0 | S | | | | | |
| 38 | CP1093-BH226-0.5 | S | | | | | |
| Name: Polina | | Name: Polina | | Name: Polina | | Name: Polina | |
| Date: 24/1/19 | | Date: 24/1/19 | | Date: 24/1/19 | | Date: 24/1/19 | |
| Time: 14:00 | | Time: 14:00 | | Time: 14:35 | | Time: 14:35 | |
| Of: AECOM | | Of: AECOM | | Of: AECOM | | Of: AECOM | |
| RECEIVED BY | | RECEIVED BY | | RECEIVED BY | | RECEIVED BY | |
| Name: Polina | | Name: Polina | | Name: Polina | | Name: Polina | |
| Date: 24/1/19 | | Date: 24/1/19 | | Date: 24/1/19 | | Date: 24/1/19 | |
| Time: 14:00 | | Time: 14:00 | | Time: 14:35 | | Time: 14:35 | |
| Of: AECOM | | Of: AECOM | | Of: AECOM | | Of: AECOM | |
| METHOD OF SHIPMENT | | METHOD OF SHIPMENT | | METHOD OF SHIPMENT | | METHOD OF SHIPMENT | |
| Cont Note No: | | Cont Note No: | | Cont Note No: | | Cont Note No: | |
| Transport Co: | | Transport Co: | | Transport Co: | | Transport Co: | |
| Notes: e.g. Highly contaminated samples
e.g. "High P4Hs expected".
Extra volume for QC or trace LORs etc. | | Notes: e.g. Highly contaminated samples
e.g. "High P4Hs expected".
Extra volume for QC or trace LORs etc. | | Notes: e.g. Highly contaminated samples
e.g. "High P4Hs expected".
Extra volume for QC or trace LORs etc. | | Notes: e.g. Highly contaminated samples
e.g. "High P4Hs expected".
Extra volume for QC or trace LORs etc. | |

COC Page 2 of 3

From: [REDACTED]@aecom.com>
Sent: Friday, 25 January 2019 4:03 PM
To: [REDACTED]
Subject: RE: AECOM - Samples received ON HOLD

Hi [REDACTED]

Please analyse:

1 CPT111_BH42_240119_0.0 = IWRG621
2 CPT111_BH42_240119_0.5 = IWRG621
3 CPT099_BH37_240119_0.0 = IWRG621
4 CPT099_BH37_240119_0.5 = IWRG621
5 CPT093_BH227_240119_0.5 = Chromium Suite (EA033)
6 CPT093_BH227_240119_1.5 = Chromium Suite (EA033)
7 CPT093_BH223_240119_0.5 = Chromium Suite (EA033)
8 CPT093_BH223_240119_2.0 = Chromium Suite (EA033)
9 CPT093_BH224_240119_0.5 = SPOCAS (EA029)
10 CPT093_BH224_240119_1.5 = SPOCAS (EA029)
11 CPT093_BH225_240119_0.5 = Chromium Suite (EA033)
12 CPT093_BH225_240119_1.5 = Chromium Suite (EA033)
13 CPT093_BH226_240119_0.5 = Chromium Suite (EA033)
14 CPT093_BH226_240119_1.5 = Chromium Suite (EA033)
15 QC356_240119 = IWRG621 water equivalent
16 QC456_240119 = TPH(C6-C9)/BTEXN
17 QC563_240119 = TPH(C6-C9)/BTEXN
18 QC564_240119 = TPH(C6-C9)/BTEXN

At 3 days TAT. Thanks!

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

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T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

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From: [REDACTED]@alsglobal.com]
Sent: Friday, 25 January 2019 2:20 PM
To: [REDACTED]
Subject: AECOM - Samples received ON HOLD

Hi [REDACTED]


Please find attached samples on hold

Thanks

Regards

| | | | | | | | |
|---|------------------|-----------------------|---------|--|-------------|------------------------------------|--|
| CONSULTANT: AECOM | | ADDRESS/OFFICE: | | SAMPLER: PAPPY | | Destination Laboratory: ALS | |
| PROJECT MANAGER (PM): | | SITE: | | MOBILE: | | PHONE: | |
| PROJECT NUMBER & TASK CODE: 08597634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | |
| COMMENTS, SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | | | |
| FOR LABORATORY USE ONLY | | | | | | | |
| COOLER SEAL (if appropriate) | | | | | | | |
| Initial: Yes No N/A | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes No | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | HOLD | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | CPT111-BH42-0.0 | S | 24/1/19 | 8:40 | 1X A.S.S | 2 | |
| 2 | CPT111-BH42-0.5 | S | | 8:45 | | 1 | |
| 3 | CPT111-BH42-1.0 | S | | 8:50 | | | |
| 4 | CPT111-BH42-1.5 | S | | 8:55 | | | |
| 5 | CPT111-BH42-2.0 | S | | 9:00 | | | |
| 6 | CPT111-BH42-2.5 | S | | 9:10 | | | |
| 7 | CPT099-BH37-0.0 | S | | 10:00 | | | |
| 8 | CPT099-BH37-0.5 | S | | 10:05 | | | |
| 9 | CPT099-BH37-1.0 | S | | 10:10 | | | |
| 10 | CPT099-BH37-1.5 | S | | 10:15 | | | |
| 11 | CPT099-BH37-2.0 | S | | 10:20 | | | |
| 12 | CPT099-BH37-2.5 | S | | 10:20 | 1X A.S.S | | |
| 13 | CPT093-BH217-0.0 | S | | 11:20 | | | |
| 14 | CPT093-BH217-0.5 | S | | 11:25 | | | |
| 15 | CPT093-BH217-1.0 | S | | 11:30 | | | |
| 16 | CPT093-BH217-1.5 | S | | 11:35 | | | |
| 17 | CPT093-BH217-2.0 | S | | 11:40 | | | |
| 18 | CPT093-BH217-2.5 | S | | 11:45 | | | |
| 19 | CPT092-BH223-0.0 | S | | 11:50 | | | |

Environmental Division
Melbourne
Work Order Reference
EM1900977



Telephone: + 61 3 8649 9600

| | | | |
|--------------------|----------------------|-----------------|----------------------|
| RELINQUISHED BY: | | RECEIVED BY: | |
| Name: PAPPY | Date: 24/1/19 | Name: RB | Date: 24/1/19 |
| Of: AECOM | Time: 14:00 | Of: ALS | Time: 14:35 |

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic

V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulphuric Preserved; AV = Airfreight Unpreserved Vial BG = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = Sulphuric Preserved Plastic;

F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.

Soil Container Codes: Jar = Unpreserved glass jar

Handwritten signature and date: 26/1

ANZ
FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

| CONSULTANT: AECOM | | ADDRESS/OFFICE: | | SAMPLER: | | Destination Laboratory | |
|--|------------------|-----------------|---------|---|-------------|------------------------|--|
| PROJECT MANAGER (PM): | | SITE: | | MOBILE: | | A2S | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices): | | | |
| FOR LABORATORY USE ONLY | | | | Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | | | |
| COOLER REAL (circle appropriate) | | | | | | | |
| Isotemp °F | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED °F | | | | | | | |
| COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | | | |
| SAMPLE INFORMATION (code: S = Soil, W = Water) | | DATE | | TIME | | CONTAINER INFORMATION | |
| ALS ID | SAMPLE ID | MATRIX | DATE | TIME | Type / Code | Total bottles | |
| 20 | CP1012-BH223-0.5 | S | 24/1/19 | 11:40 | 1X A.S.S | 1 | |
| 21 | CP1012-BH223-1.0 | S | | 11:50 | | | |
| 22 | CP1012-BH223-1.5 | S | | 11:55 | | | |
| 23 | CP1012-BH223-2.0 | S | | 12:00 | | | |
| 24 | CP1012-BH223-2.5 | S | | 12:10 | | | |
| 25 | CP1012-BH224-0.0 | S | | 12:30 | | | |
| 26 | CP1012-BH224-0.5 | S | | 12:35 | | | |
| 27 | CP1012-BH224-1.0 | S | | 12:40 | | | |
| 28 | CP1012-BH224-1.5 | S | | 12:45 | | | |
| 29 | CP1012-BH224-2.0 | S | | 12:50 | | | |
| 30 | CP1012-BH224-2.5 | S | | 13:00 | | | |
| 31 | CP1013-BH225-0.0 | S | | | | | |
| 32 | CP1013-BH225-0.5 | S | | | | | |
| 33 | CP1013-BH225-1.0 | S | | | | | |
| 34 | CP1013-BH225-1.5 | S | | | | | |
| 35 | CP1013-BH225-2.0 | S | | | | | |
| 36 | CP1013-BH225-2.5 | S | | | | | |
| 37 | CP1013-BH226-0.0 | S | | | | | |
| 38 | CP1013-BH226-0.5 | S | | | | | |
| RELINQUISHED BY: | | | | RECEIVED BY: | | | |
| Name: P. Kelly | | Date: 24/1/19 | | Name: [Signature] | | Date: 24/1/19 | |
| Of: AECOM | | Time: 14:00 | | Of: A2S | | Time: 14:35 | |
| METHODOLOGY | | | | METHODOLOGY | | | |
| Con' Note No: | | | | Con' Note No: | | | |
| Transport Co: | | | | Transport Co: | | | |

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Plastic; Jar = Unpreserved glass jar

Soil Container Codes: ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag

COC Page 2 of 3

| | | | | | | | |
|--|--------------------|--|---------------|--|-------------|-------------------------|--|
| CONSULTANT: A/ECON | | ADDRESS / OFFICE: | | SAMPLER: | | Destination Laboratory: | |
| PROJECT MANAGER (PM): | | SITE: | | MOBILE: | | PHONE: | |
| PROJECT NUMBER & TASK CODE: 60572634 | | P.O. NO.: | | EMAIL REPORT TO: | | A.E.S. | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| ACQUA LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | |
| COOLER SEAL (check appropriate) | | | | | | | |
| Print: Yes No N/A | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes No | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 39 | CPT093-BH226-1.0 S | | 24/1/19 | | 1 x A-S-S | 1 | |
| 40 | CPT093-BH226-1.4 S | | | | | | |
| 41 | CPT093-BH226-2.0 S | | | | | | |
| 42 | CPT093-BH226-2.5 S | | | | | | |
| 43 | QC356-240119 W | | 24/1/19 13:30 | | | 9 | |
| 44 | QC456-240119 W | | | | purples | 2 | |
| 45 | QC563-240119 W | | | | | 1 | |
| 46 | QC564-240119 W | | | | | 1 | |
| Notes: e.g. Highly contaminated sample
e.g. "High PAHs expected"
Extra volume for QC or trace LORs etc | | | | | | | |
| HOLD | | | | | | | |
| A-S-S to be frozen | | | | | | | |

| | | | | | |
|---|----------------------|-----------------|----------------------|--------------------|--|
| RELINQUISHED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
| Name: P. O. B. | Date: 24/1/19 | Name: NB | Date: 24/1/19 | Con' Note No.: | |
| Of: P. O. B. | Time: 14:00 | Of: ALS | Time: 14:35 | Transport Co.: | |
| Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Airtight Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Airtight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Specimen bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag; Soil Container Codes: Jar = Unpreserved glass jar | | | | | |

From: [REDACTED]@aecom.com>
Sent: Friday, 25 January 2019 4:03 PM
To: [REDACTED]
Subject: RE: AECOM - Samples received ON HOLD

Hi [REDACTED]

Please analyse:

1 CPT111_BH42_240119_0.0 = IWRG621
2- CPT111_BH42_240119_0.5 = IWRG621
-1 CPT099_BH37_240119_0.0 = IWRG621
8 CPT099_BH37_240119_0.5 = IWRG621
14 CPT093_BH227_240119_0.5 = Chromium Suite (EA033)
16 CPT093_BH227_240119_1.5 = Chromium Suite (EA033)
20 CPT093_BH223_240119_0.5 = Chromium Suite (EA033)
23 CPT093_BH223_240119_2.0 = Chromium Suite (EA033)
26 CPT093_BH224_240119_0.5 = SPOCAS (EA029)
28 CPT093_BH224_240119_1.5 = SPOCAS (EA029)
32 CPT093_BH225_240119_0.5 = Chromium Suite (EA033)
34 CPT093_BH225_240119_1.5 = Chromium Suite (EA033)
38 CPT093_BH226_240119_0.5 = Chromium Suite (EA033)
40 CPT093_BH226_240119_1.5 = Chromium Suite (EA033)
43 QC356_240119 = IWRG621 water equivalent
44 QC456_240119 = TPH(C6-C9)/BTEXN
45 QC563_240119 = TPH(C6-C9)/BTEXN
46 QC564_240119 = TPH(C6-C9)/BTEXN

At 3 days TAT. Thanks!

[REDACTED]
Senior Environmental Engineer
[REDACTED]

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

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From: [REDACTED]@alsglobal.com]
Sent: Friday, 25 January 2019 2:20 PM
To: [REDACTED]
Subject: AECOM - Samples received ON HOLD

Hi [REDACTED]

Please find attached samples on hold

Thanks

Regards

From: [REDACTED]@aecom.com>
Sent: Tuesday, 29 January 2019 8:33 AM
To: [REDACTED]
Subject: RE: SRN for ALS Workorder : EM1900977 | Your Reference: 60592634

Hi [REDACTED]

I accidentally left out ASS analysis for BH37 & BH42. Can you please analyse:

2 1. CPT111_BH42_240119_0.5 = chromium suite (EA033)
4 1. CPT111_BH42_240119_1.5 = chromium suite (EA033)
8 1. CPT099_BH37_240119_0.5 = chromium suite (EA033)
10 4. CPT099_BH37_240119_1.5 = chromium suite (EA033)

Thanks!

[REDACTED]
Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

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aecom.com

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From: angel-no-reply@alsglobal.com [mailto:angel-no-reply@alsglobal.com]
Sent: Saturday, 26 January 2019 2:00 PM
To: [REDACTED]
Subject: SRN for ALS Workorder : EM1900977 | Your Reference: 60592634



Deliverables for ALS Workorder EM1900977

Project: 60592634

Dear [REDACTED]

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900977

| | |
|--|--|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : ----</p> <p>Sampler : Poppy</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 4</p> <p>Quote number : EB2017AECOMAU0014 (EN/004/16)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|--|--|

Dates

| | |
|---|--|
| <p>Date Samples Received : 24-Jan-2019 14:35</p> <p>Client Requested Due Date : 01-Feb-2019</p> | <p>Issue Date : 26-Jan-2019</p> <p>Scheduled Reporting Date : 01-Feb-2019</p> |
|---|--|

Delivery Details

| | |
|--|--|
| <p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 2</p> <p>Receipt Detail :</p> | <p>Security Seal : Not Available</p> <p>Temperature : 8.1±8C - Ice Bricks present</p> <p>No. of samples received / analysed : 46 / 18</p> |
|--|--|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|---|--|
| Dissolved Mercury by FIMS : EG035F | | |
| QC356 | - Clear Plastic Bottle - Nitric Acid; Unspecified | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite A : EG020A-F | | |
| QC356 | - Clear Plastic Bottle - Nitric Acid; Unspecified | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite B : EG020B-F | | |
| QC356 | - Clear Plastic Bottle - Nitric Acid; Unspecified | - Clear Plastic Bottle - Nitric Acid; Filtered |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
|----------------------|-----------------------------|------------------|---|------------------------|--|--------------------------------------|-------------------------|
| EM1900977-001 | 24-Jan-2019 08:40 | CPT111_BH42_0.0 | | | | □ | □ |
| EM1900977-002 | 24-Jan-2019 08:45 | CPT111_BH42_0.5 | | | | □ | □ |
| EM1900977-003 | 24-Jan-2019 08:50 | CPT111_BH42_1.0 | □ | | | | |
| EM1900977-004 | 24-Jan-2019 08:55 | CPT111_BH42_1.5 | □ | | | | |
| EM1900977-005 | 24-Jan-2019 09:00 | CPT111_BH42_2.0 | □ | | | | |
| EM1900977-006 | 24-Jan-2019 09:10 | CPT111_BH42_2.5 | □ | | | | |
| EM1900977-007 | 24-Jan-2019 10:00 | CPT099_BH37_0.0 | | | | □ | □ |
| EM1900977-008 | 24-Jan-2019 10:05 | CPT099_BH37_0.5 | | | | □ | □ |
| EM1900977-009 | 24-Jan-2019 10:10 | CPT099_BH37_1.0 | □ | | | | |
| EM1900977-010 | 24-Jan-2019 10:15 | CPT099_BH37_1.5 | □ | | | | |
| EM1900977-011 | 24-Jan-2019 10:20 | CPT099_BH37_2.0 | □ | | | | |
| EM1900977-012 | 24-Jan-2019 10:20 | CPT099_BH37_2.5 | □ | | | | |
| EM1900977-013 | 24-Jan-2019 11:20 | CPT093_BH227_0.0 | □ | | | | |
| EM1900977-014 | 24-Jan-2019 11:25 | CPT093_BH227_0.5 | | | □ | | |
| EM1900977-015 | 24-Jan-2019 11:30 | CPT093_BH227_1.0 | □ | | | | |
| EM1900977-016 | 24-Jan-2019 11:35 | CPT093_BH227_1.5 | | | □ | | |
| EM1900977-017 | 24-Jan-2019 11:40 | CPT093_BH227_2.0 | □ | | | | |
| EM1900977-018 | 24-Jan-2019 11:45 | CPT093_BH227_2.5 | □ | | | | |
| EM1900977-019 | 24-Jan-2019 11:30 | CPT092_BH223_0.0 | □ | | | | |
| EM1900977-020 | 24-Jan-2019 11:40 | CPT092_BH223_0.5 | | | □ | | |
| EM1900977-021 | 24-Jan-2019 11:50 | CPT092_BH223_1.0 | □ | | | | |
| EM1900977-022 | 24-Jan-2019 11:55 | CPT092_BH223_1.5 | □ | | | | |
| EM1900977-023 | 24-Jan-2019 12:00 | CPT092_BH223_2.0 | | | □ | | |
| EM1900977-024 | 24-Jan-2019 12:10 | CPT092_BH223_2.5 | □ | | | | |
| EM1900977-025 | 24-Jan-2019 12:30 | CPT092_BH224_0.0 | □ | | | | |
| EM1900977-026 | 24-Jan-2019 12:35 | CPT092_BH224_0.5 | | □ | | | |
| EM1900977-027 | 24-Jan-2019 12:40 | CPT092_BH224_1.0 | □ | | | | |
| EM1900977-028 | 24-Jan-2019 12:45 | CPT092_BH224_1.5 | | □ | | | |



| | | | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
|---------------|-------------------|------------------|---|------------------------|--|--------------------------------------|-------------------------|
| EM1900977-029 | 24-Jan-2019 12:50 | CPT092_BH224_2.0 | ☐ | | | | |
| EM1900977-030 | 24-Jan-2019 13:00 | CPT092_BH224_2.5 | ☐ | | | | |
| EM1900977-031 | 24-Jan-2019 00:00 | CPT093_BH225_0.0 | ☐ | | | | |
| EM1900977-032 | 24-Jan-2019 00:00 | CPT093_BH225_0.5 | | | ☐ | | |
| EM1900977-033 | 24-Jan-2019 00:00 | CPT093_BH225_1.0 | ☐ | | | | |
| EM1900977-034 | 24-Jan-2019 00:00 | CPT093_BH225_1.5 | | | ☐ | | |
| EM1900977-035 | 24-Jan-2019 00:00 | CPT093_BH225_2.0 | ☐ | | | | |
| EM1900977-036 | 24-Jan-2019 00:00 | CPT093_BH225_2.5 | ☐ | | | | |
| EM1900977-037 | 24-Jan-2019 00:00 | CPT093_BH226_0.0 | ☐ | | | | |
| EM1900977-038 | 24-Jan-2019 00:00 | CPT093_BH226_0.5 | | | ☐ | | |
| EM1900977-039 | 24-Jan-2019 00:00 | CPT093_BH226_1.0 | ☐ | | | | |
| EM1900977-040 | 24-Jan-2019 00:00 | CPT093_BH226_1.5 | | | ☐ | | |
| EM1900977-041 | 24-Jan-2019 00:00 | CPT093_BH226_2.0 | ☐ | | | | |
| EM1900977-042 | 24-Jan-2019 00:00 | CPT093_BH226_2.5 | ☐ | | | | |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------------------|
| EM1900977-043 | 24-Jan-2019 13:30 | QC356 | ☐ | |
| EM1900977-044 | 24-Jan-2019 00:00 | QC456 | | ☐ |
| EM1900977-045 | 24-Jan-2019 00:00 | QC563 | | ☐ |
| EM1900977-046 | 24-Jan-2019 00:00 | QC564 | | ☐ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ☐ = Holding time breach ; ☑ = Within holding time.

| <div>☐ ☐ ☐ ☐</div> | Container | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|----------------------------|--------------------------------|--------------------|------------------|------------------|--------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| QC356 | Clear Plastic Bottle - Natural | ---- | 24-Jan-2019 | 24-Jan-2019 | <div>☑</div> | 25-Jan-2019 | |



Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- Chain of Custody (CoC) (COC)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)

Email

- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)

Email

- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)

Email

- A4 - AU Sample Receipt Notification - Environmental HT (SRN)

Email

- A4 - AU Tax Invoice (INV)

Email

- Chain of Custody (CoC) (COC)

Email

- EDI Format - ENMRG (ENMRG)

Email

- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)

Email

- EDI Format - ESDAT (ESDAT)

Email

- EDI Format - XTab (XTAB)

Email

- Electronic SRN for EQUIS (ESRN_EQUIS)

Email

- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

Email

- *AU Certificate of Analysis - NATA (COA)

Email

- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)

Email

- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)

Email

- A4 - AU Sample Receipt Notification - Environmental HT (SRN)

Email

- A4 - AU Tax Invoice (INV)

Email

- Chain of Custody (CoC) (COC)

Email

- EDI Format - ENMRG (ENMRG)

Email

- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)

Email

- EDI Format - ESDAT (ESDAT)

Email

- EDI Format - XTab (XTAB)

Email

- Electronic SRN for EQUIS (ESRN_EQUIS)

Email

- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

Email

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900977

| | |
|---|--|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : ----</p> <p>Sampler : [REDACTED]</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 4</p> <p>Quote number : EB2017AECOMAU0014 (EN/004/16)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|---|--|

Dates

| | |
|---|--|
| <p>Date Samples Received : 24-Jan-2019 14:35</p> <p>Client Requested Due Date : 01-Feb-2019</p> | <p>Issue Date : 29-Jan-2019</p> <p>Scheduled Reporting Date : 01-Feb-2019</p> |
|---|--|

Delivery Details

| | |
|--|--|
| <p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 2</p> <p>Receipt Detail :</p> | <p>Security Seal : Not Available</p> <p>Temperature : 8.1±8C - Ice Bricks present</p> <p>No. of samples received / analysed : 46 / 20</p> |
|--|--|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|---|--|
| Dissolved Mercury by FIMS : EG035F | | |
| QC356 | - Clear Plastic Bottle - Nitric Acid; Unspecified | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite A : EG020A-F | | |
| QC356 | - Clear Plastic Bottle - Nitric Acid; Unspecified | - Clear Plastic Bottle - Nitric Acid; Filtered |
| Dissolved Metals by ICP-MS - Suite B : EG020B-F | | |
| QC356 | - Clear Plastic Bottle - Nitric Acid; Unspecified | - Clear Plastic Bottle - Nitric Acid; Filtered |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
|----------------------|-----------------------------|------------------|---|------------------------|--|--------------------------------------|-------------------------|
| EM1900977-001 | 24-Jan-2019 08:40 | CPT111_BH42_0.0 | | | | □ | □ |
| EM1900977-002 | 24-Jan-2019 08:45 | CPT111_BH42_0.5 | | | □ | □ | □ |
| EM1900977-003 | 24-Jan-2019 08:50 | CPT111_BH42_1.0 | □ | | | | |
| EM1900977-004 | 24-Jan-2019 08:55 | CPT111_BH42_1.5 | | | □ | | |
| EM1900977-005 | 24-Jan-2019 09:00 | CPT111_BH42_2.0 | □ | | | | |
| EM1900977-006 | 24-Jan-2019 09:10 | CPT111_BH42_2.5 | □ | | | | |
| EM1900977-007 | 24-Jan-2019 10:00 | CPT099_BH37_0.0 | | | | □ | □ |
| EM1900977-008 | 24-Jan-2019 10:05 | CPT099_BH37_0.5 | | | □ | □ | □ |
| EM1900977-009 | 24-Jan-2019 10:10 | CPT099_BH37_1.0 | □ | | | | |
| EM1900977-010 | 24-Jan-2019 10:15 | CPT099_BH37_1.5 | | | □ | | |
| EM1900977-011 | 24-Jan-2019 10:20 | CPT099_BH37_2.0 | □ | | | | |
| EM1900977-012 | 24-Jan-2019 10:20 | CPT099_BH37_2.5 | □ | | | | |
| EM1900977-013 | 24-Jan-2019 11:20 | CPT093_BH227_0.0 | □ | | | | |
| EM1900977-014 | 24-Jan-2019 11:25 | CPT093_BH227_0.5 | | | □ | | |
| EM1900977-015 | 24-Jan-2019 11:30 | CPT093_BH227_1.0 | □ | | | | |
| EM1900977-016 | 24-Jan-2019 11:35 | CPT093_BH227_1.5 | | | □ | | |
| EM1900977-017 | 24-Jan-2019 11:40 | CPT093_BH227_2.0 | □ | | | | |
| EM1900977-018 | 24-Jan-2019 11:45 | CPT093_BH227_2.5 | □ | | | | |
| EM1900977-019 | 24-Jan-2019 11:30 | CPT092_BH223_0.0 | □ | | | | |
| EM1900977-020 | 24-Jan-2019 11:40 | CPT092_BH223_0.5 | | | □ | | |
| EM1900977-021 | 24-Jan-2019 11:50 | CPT092_BH223_1.0 | □ | | | | |
| EM1900977-022 | 24-Jan-2019 11:55 | CPT092_BH223_1.5 | □ | | | | |
| EM1900977-023 | 24-Jan-2019 12:00 | CPT092_BH223_2.0 | | | □ | | |
| EM1900977-024 | 24-Jan-2019 12:10 | CPT092_BH223_2.5 | □ | | | | |
| EM1900977-025 | 24-Jan-2019 12:30 | CPT092_BH224_0.0 | □ | | | | |
| EM1900977-026 | 24-Jan-2019 12:35 | CPT092_BH224_0.5 | | □ | | | |
| EM1900977-027 | 24-Jan-2019 12:40 | CPT092_BH224_1.0 | □ | | | | |
| EM1900977-028 | 24-Jan-2019 12:45 | CPT092_BH224_1.5 | | □ | | | |



| | | | (On Hold) SOIL
No analysis requested | SOIL - EA029
SPOCAS | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
|---------------|-------------------|------------------|---|------------------------|--|--------------------------------------|-------------------------|
| EM1900977-029 | 24-Jan-2019 12:50 | CPT092_BH224_2.0 | ☐ | | | | |
| EM1900977-030 | 24-Jan-2019 13:00 | CPT092_BH224_2.5 | ☐ | | | | |
| EM1900977-031 | 24-Jan-2019 00:00 | CPT093_BH225_0.0 | ☐ | | | | |
| EM1900977-032 | 24-Jan-2019 00:00 | CPT093_BH225_0.5 | | | ☐ | | |
| EM1900977-033 | 24-Jan-2019 00:00 | CPT093_BH225_1.0 | ☐ | | | | |
| EM1900977-034 | 24-Jan-2019 00:00 | CPT093_BH225_1.5 | | | ☐ | | |
| EM1900977-035 | 24-Jan-2019 00:00 | CPT093_BH225_2.0 | ☐ | | | | |
| EM1900977-036 | 24-Jan-2019 00:00 | CPT093_BH225_2.5 | ☐ | | | | |
| EM1900977-037 | 24-Jan-2019 00:00 | CPT093_BH226_0.0 | ☐ | | | | |
| EM1900977-038 | 24-Jan-2019 00:00 | CPT093_BH226_0.5 | | | ☐ | | |
| EM1900977-039 | 24-Jan-2019 00:00 | CPT093_BH226_1.0 | ☐ | | | | |
| EM1900977-040 | 24-Jan-2019 00:00 | CPT093_BH226_1.5 | | | ☐ | | |
| EM1900977-041 | 24-Jan-2019 00:00 | CPT093_BH226_2.0 | ☐ | | | | |
| EM1900977-042 | 24-Jan-2019 00:00 | CPT093_BH226_2.5 | ☐ | | | | |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|---|------------------------------------|
| EM1900977-043 | 24-Jan-2019 13:30 | QC356 | ☐ | |
| EM1900977-044 | 24-Jan-2019 00:00 | QC456 | | ☐ |
| EM1900977-045 | 24-Jan-2019 00:00 | QC563 | | ☐ |
| EM1900977-046 | 24-Jan-2019 00:00 | QC564 | | ☐ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ☐ = Holding time breach ; ☑ = Within holding time.

| <div>☐ ☐ ☐ ☐</div> | Container | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|----------------------------|--------------------------------|--------------------|------------------|------------------|--------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| QC356 | Clear Plastic Bottle - Natural | ---- | 24-Jan-2019 | 24-Jan-2019 | <div>☑</div> | 25-Jan-2019 | |

ACCOUNTS PAYABLE

- Email AP_CustomerService.ANZ@aecom.com

- Email AP_CustomerService.ANZ@aecom.com

- [illegible]

- [illegible]

CERTIFICATE OF ANALYSIS

Work Order : **EM1900977**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number : 60592634
C-O-C number : ----
Sampler : [REDACTED]
Site : ----
Quote number : EN/004/16
No. of samples received : 46
No. of samples analysed : 20

Page : 1 of 19
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 24-Jan-2019 14:35
Date Analysis Commenced : 29-Jan-2019
Issue Date : 04-Feb-2019 13:19



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|-------------------------------------|---|
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Metals Team Leader | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- EP074-UT: Particular sample EM1900977_002 shows poor matrix spike recovery due to sample. Confirmed by re-analysis. Unable to confirm via re-extraction due to the compromising of volatile compounds by sample homogenisation.
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m³ in-situ soil, multiply reported results x wet bulk density of soil in t/m³.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT111_BH42_0.0 | CPT111_BH42_0.5 | CPT111_BH42_1.5 | CPT099_BH37_0.0 | CPT099_BH37_0.5 |
|--|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 24-Jan-2019 08:40 | 24-Jan-2019 08:45 | 24-Jan-2019 08:55 | 24-Jan-2019 10:00 | 24-Jan-2019 10:05 |
| Compound | CAS Number | LOR | Unit | | EM1900977-001 | EM1900977-002 | EM1900977-004 | EM1900977-007 | EM1900977-008 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 4.2 | 4.2 | ---- | 4.5 | 4.8 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 4.3 | 4.4 | ---- | 4.6 |
| Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | 53 | 47 | ---- | 43 |
| sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | 0.08 | 0.08 | ---- | 0.07 |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | 0.006 | 0.006 | ---- | 0.008 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | <10 |
| EA033-D: Retained Acidity | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | | ---- | <0.02 | <0.02 | ---- | ---- |
| HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | | ---- | <0.02 | 0.02 | ---- | ---- |
| Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | | ---- | <0.02 | <0.02 | ---- | ---- |
| acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | ---- |
| sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | | ---- | <0.02 | <0.02 | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | 1.5 | ---- | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | 0.10 | 0.08 | ---- | 0.08 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | 59 | 53 | ---- | 48 |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | 4 | 4 | ---- | 4 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | 0.10 | 0.08 | ---- | 0.08 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | 59 | 53 | ---- | 48 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | 4 | 4 | ---- | 4 |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 20.6 | 20.2 | ---- | 22.7 | 26.3 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | | 14 | 11 | ---- | 34 | 32 |
| Lead | 7439-92-1 | 5 | mg/kg | | 23 | 17 | ---- | 21 | 17 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | <2 | <2 | ---- | <2 | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | | 10 | 5 | ---- | 17 | 13 |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | <2 | ---- | <2 | <2 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT111_BH42_0.0 | CPT111_BH42_0.5 | CPT111_BH42_1.5 | CPT099_BH37_0.0 | CPT099_BH37_0.5 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 24-Jan-2019 08:40 | 24-Jan-2019 08:45 | 24-Jan-2019 08:55 | 24-Jan-2019 10:00 | 24-Jan-2019 10:05 |
| Compound | CAS Number | LOR | Unit | | EM1900977-001 | EM1900977-002 | EM1900977-004 | EM1900977-007 | EM1900977-008 |
| | | | | | Result | Result | Result | Result | Result |
| EG005T: Total Metals by ICP-AES - Continued | | | | | | | | | |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | | 7 | <5 | ---- | 14 | 6 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | 1 | <1 | ---- | 2 | 1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 210 | 240 | ---- | 250 | 250 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | 0.5 | <0.5 | ---- | <0.5 | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | 2.8 | 0.8 | ---- | 1.0 | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | 1.0 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | 4.3 | 0.8 | ---- | 1.0 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | 3.8 | 0.8 | ---- | 1.0 | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | <0.4 | ---- | <0.4 | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT111_BH42_0.0 | CPT111_BH42_0.5 | CPT111_BH42_1.5 | CPT099_BH37_0.0 | CPT099_BH37_0.5 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 24-Jan-2019 08:40 | 24-Jan-2019 08:45 | 24-Jan-2019 08:55 | 24-Jan-2019 10:00 | 24-Jan-2019 10:05 |
| Compound | CAS Number | LOR | Unit | | EM1900977-001 | EM1900977-002 | EM1900977-004 | EM1900977-007 | EM1900977-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | <0.04 | ---- | <0.04 | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | <0.02 | ---- | <0.02 | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | <0.01 | ---- | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | <0.2 | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | <5 | ---- | <5 | <5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT111_BH42_0.0 | CPT111_BH42_0.5 | CPT111_BH42_1.5 | CPT099_BH37_0.0 | CPT099_BH37_0.5 |
|---|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 24-Jan-2019 08:40 | 24-Jan-2019 08:45 | 24-Jan-2019 08:55 | 24-Jan-2019 10:00 | 24-Jan-2019 10:05 |
| Compound | CAS Number | LOR | Unit | | EM1900977-001 | EM1900977-002 | EM1900977-004 | EM1900977-007 | EM1900977-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds (Non-halogenated) - Continued | | | | | | | | | |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | <1 | ---- | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | 0.6 | ---- | 0.6 | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | 1.2 | ---- | 1.2 | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT111_BH42_0.0 | CPT111_BH42_0.5 | CPT111_BH42_1.5 | CPT099_BH37_0.0 | CPT099_BH37_0.5 |
|--|----------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 24-Jan-2019 08:40 | 24-Jan-2019 08:45 | 24-Jan-2019 08:55 | 24-Jan-2019 10:00 | 24-Jan-2019 10:05 |
| Compound | CAS Number | LOR | Unit | | EM1900977-001 | EM1900977-002 | EM1900977-004 | EM1900977-007 | EM1900977-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | <0.05 | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | | <0.03 | <0.03 | ---- | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | <10 | ---- | <10 | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | <50 | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | <10 | ---- | <10 | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | <100 | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | | 120 | <100 | ---- | 140 | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | | 120 | <50 | ---- | 140 | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | | <50 | <50 | ---- | <50 | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | | 160 | <100 | ---- | 180 | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | | <100 | <100 | ---- | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | | 160 | <50 | ---- | 180 | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | | <50 | <50 | ---- | <50 | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | <10 | ---- | <10 | <10 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 107 | 109 | ---- | 105 | 105 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 69.9 | 81.2 | ---- | 83.8 | 71.7 |



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|--|------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT111_BH42_0.0 | CPT111_BH42_0.5 | CPT111_BH42_1.5 | CPT099_BH37_0.0 | CPT099_BH37_0.5 |
| Client sampling date / time | | | | | 24-Jan-2019 08:40 | 24-Jan-2019 08:45 | 24-Jan-2019 08:55 | 24-Jan-2019 10:00 | 24-Jan-2019 10:05 |
| Compound | CAS Number | LOR | Unit | | EM1900977-001 | EM1900977-002 | EM1900977-004 | EM1900977-007 | EM1900977-008 |
| | | | | | Result | Result | Result | Result | Result |
| EP074S: VOC Surrogates (Ultra-Trace) - Continued | | | | | | | | | |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 59.2 | 73.5 | ---- | 76.3 | 62.6 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 73.8 | 92.4 | ---- | 92.8 | 74.9 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 92.4 | 102 | ---- | 92.0 | 94.7 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 76.3 | 82.1 | ---- | 73.5 | 77.2 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | 88.0 | 96.2 | ---- | 95.1 | 91.3 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | 101 | 107 | ---- | 105 | 99.3 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | 80.6 | 85.4 | ---- | 88.8 | 84.4 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | 99.3 | 104 | ---- | 101 | 99.1 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | 92.7 | 98.6 | ---- | 95.2 | 93.0 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | 105 | 110 | ---- | 106 | 103 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT099_BH37_1.5 | CPT093_BH227_0.5 | CPT093_BH227_1.5 | CPT092_BH223_0.5 | CPT092_BH223_2.0 |
|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 24-Jan-2019 10:15 | 24-Jan-2019 11:25 | 24-Jan-2019 11:35 | 24-Jan-2019 11:40 | 24-Jan-2019 12:00 |
| Compound | CAS Number | LOR | Unit | | EM1900977-010 | EM1900977-014 | EM1900977-016 | EM1900977-020 | EM1900977-023 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | 5.0 | 4.7 | 5.0 | 4.8 | 5.3 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | 13 | 28 | 19 | 27 | 11 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | 0.02 | 0.04 | 0.03 | 0.04 | <0.02 |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | <0.005 | 0.007 | 0.005 | 0.008 | <0.005 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | <10 | <10 | <10 | <10 | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | 0.02 | 0.05 | 0.04 | 0.05 | <0.02 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | 13 | 32 | 22 | 32 | 11 |
| Liming Rate | ---- | 1 | kg CaCO3/t | | <1 | 2 | 2 | 2 | <1 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | 0.02 | 0.05 | 0.04 | 0.05 | <0.02 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | 13 | 32 | 22 | 32 | 11 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | <1 | 2 | 2 | 2 | <1 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT092_BH224_0.5 | CPT092_BH224_1.5 | CPT093_BH225_0.5 | CPT093_BH225_1.5 | CPT093_BH226_0.5 |
|---|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 24-Jan-2019 12:35 | 24-Jan-2019 12:45 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900977-026 | EM1900977-028 | EM1900977-032 | EM1900977-034 | EM1900977-038 |
| | | | | | Result | Result | Result | Result | Result |
| EA029-A: pH Measurements | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | 4.7 | 5.0 | ---- | ---- | ---- |
| pH OX (23B) | ---- | 0.1 | pH Unit | | 4.3 | 5.6 | ---- | ---- | ---- |
| EA029-B: Acidity Trail | | | | | | | | | |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | 16 | 18 | ---- | ---- | ---- |
| Titrateable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | | 21 | 22 | ---- | ---- | ---- |
| Titrateable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | | 5 | 3 | ---- | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.020 | % pyrite S | | 0.025 | 0.030 | ---- | ---- | ---- |
| sulfidic - Titrateable Peroxide Acidity (s-23G) | ---- | 0.020 | % pyrite S | | 0.033 | 0.034 | ---- | ---- | ---- |
| sulfidic - Titrateable Sulfidic Acidity (s-23H) | ---- | 0.020 | % pyrite S | | <0.020 | <0.020 | ---- | ---- | ---- |
| EA029-C: Sulfur Trail | | | | | | | | | |
| KCl Extractable Sulfur (23Ce) | ---- | 0.020 | % S | | <0.020 | 0.027 | ---- | ---- | ---- |
| Peroxide Sulfur (23De) | ---- | 0.020 | % S | | 0.023 | 0.027 | ---- | ---- | ---- |
| Peroxide Oxidisable Sulfur (23E) | ---- | 0.020 | % S | | 0.023 | <0.020 | ---- | ---- | ---- |
| acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | | 14 | <10 | ---- | ---- | ---- |
| EA029-D: Calcium Values | | | | | | | | | |
| KCl Extractable Calcium (23Vh) | ---- | 0.020 | % Ca | | 0.267 | 0.214 | ---- | ---- | ---- |
| Peroxide Calcium (23Wh) | ---- | 0.020 | % Ca | | 0.269 | 0.216 | ---- | ---- | ---- |
| Acid Reacted Calcium (23X) | ---- | 0.020 | % Ca | | <0.020 | <0.020 | ---- | ---- | ---- |
| acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | | <10 | <10 | ---- | ---- | ---- |
| sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.020 | % S | | <0.020 | <0.020 | ---- | ---- | ---- |
| EA029-E: Magnesium Values | | | | | | | | | |
| KCl Extractable Magnesium (23Sm) | ---- | 0.020 | % Mg | | 0.261 | 0.270 | ---- | ---- | ---- |
| Peroxide Magnesium (23Tm) | ---- | 0.020 | % Mg | | 0.262 | 0.272 | ---- | ---- | ---- |
| Acid Reacted Magnesium (23U) | ---- | 0.020 | % Mg | | <0.020 | <0.020 | ---- | ---- | ---- |
| Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | | <10 | <10 | ---- | ---- | ---- |
| sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.020 | % S | | <0.020 | <0.020 | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | 1.5 | 1.5 | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | 0.05 | 0.03 | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | 30 | 18 | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | 2 | 1 | ---- | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT092_BH224_0.5 | CPT092_BH224_1.5 | CPT093_BH225_0.5 | CPT093_BH225_1.5 | CPT093_BH226_0.5 |
|--|------------|-------|-------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 24-Jan-2019 12:35 | 24-Jan-2019 12:45 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900977-026 | EM1900977-028 | EM1900977-032 | EM1900977-034 | EM1900977-038 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA029-H: Acid Base Accounting - Continued | | | | | | | | | |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | 0.05 | 0.03 | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | 30 | 18 | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | 2 | 1 | ---- | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | ---- | 4.8 | 5.2 | 4.8 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | ---- | 22 | 11 | 30 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | ---- | 0.04 | <0.02 | 0.05 |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | ---- | 0.007 | <0.005 | 0.008 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | ---- | <10 | <10 | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | ---- | 1.5 | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | ---- | 0.04 | <0.02 | 0.06 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | ---- | 27 | 11 | 36 |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | ---- | 2 | <1 | 3 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | ---- | 0.04 | <0.02 | 0.06 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | ---- | 27 | 11 | 36 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | ---- | 2 | <1 | 3 |



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|---|------------|-------|-----------------------------|-------------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | Client sample ID | CPT093_BH226_1.5 | ---- | ---- | ---- | ---- |
| | | | Client sampling date / time | 24-Jan-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1900977-040 | ----- | ----- | ----- | ----- |
| | | | | Result | ---- | ---- | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.3 | ---- | ---- | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 13 | ---- | ---- | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.006 | ---- | ---- | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | ---- | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.03 | ---- | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 17 | ---- | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | 1 | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.03 | ---- | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 17 | ---- | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 1 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC356 | QC456 | QC563 | QC564 | ---- |
|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 24-Jan-2019 13:30 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900977-043 | EM1900977-044 | EM1900977-045 | EM1900977-046 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 5.92 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | <0.005 | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | <0.004 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC356 | QC456 | QC563 | QC564 | ---- |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 24-Jan-2019 13:30 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900977-043 | EM1900977-044 | EM1900977-045 | EM1900977-046 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC356 | QC456 | QC563 | QC564 | ---- |
|---|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 24-Jan-2019 13:30 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900977-043 | EM1900977-044 | EM1900977-045 | EM1900977-046 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075A: Phenolic Compounds (Halogenated) - Continued | | | | | | | | | |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,3,4,5 &
2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| 4-Nitrophenol | 100-02-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| Dinoseb | 88-85-7 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC356 | QC456 | QC563 | QC564 | ---- |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 24-Jan-2019 13:30 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900977-043 | EM1900977-044 | EM1900977-045 | EM1900977-046 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 78.3 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 90.4 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 87.9 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 89.5 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 27.1 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 59.4 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 62.4 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 70.0 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 70.8 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 68.2 | ---- | ---- | ---- | ---- |



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|---|------------|------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC356 | QC456 | QC563 | QC564 | ---- |
| Client sampling date / time | | | | | 24-Jan-2019 13:30 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900977-043 | EM1900977-044 | EM1900977-045 | EM1900977-046 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.25 | % | | 25.6 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.25 | % | | 52.2 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.25 | % | | 56.4 | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.25 | % | | 70.4 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.25 | % | | 57.8 | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.25 | % | | 69.0 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.25 | % | | 68.0 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.25 | % | | 72.5 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 89.7 | 94.4 | 93.9 | 85.6 | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 83.1 | 90.6 | 92.8 | 70.9 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 88.2 | 94.4 | 94.4 | 83.9 | ---- |



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| Sub-Matrix: SOIL | | □□□□ □ □□□ □ s □ | |
|---|------------|------------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

| Sub-Matrix: WATER | | □□□□ □ □□□ □ s □ | |
|---|------------|------------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 13 | 90 |
| 2-Chlorophenol-D4 | 93951-73-6 | 42 | 117 |
| 2,4,6-Tribromophenol | 118-79-6 | 52 | 140 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 49 | 136 |

| Sub-Matrix: WATER | | 🔍 📄 📊 📑 ⚙️ | |
|--|------------|------------|-------|
| Compound | CAS Number | % | 📄 📊 📑 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) - Continued | | | |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 49 | 128 |
| 2-Fluorobiphenyl | 321-60-8 | 57 | 137 |
| Anthracene-d10 | 1719-06-8 | 67 | 137 |
| 4-Terphenyl-d14 | 1718-51-0 | 66 | 136 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1900977 | Page | : 1 of 8 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 24-Jan-2019 14:35 |
| Order number | : 60592634 | Date Analysed | : 29-Jan-2019 |
| C-O-C number | : ---- | Date Issued | : 04-Feb-2019 13:19 |
| No. of samples received | : 46 | | |
| No. of samples analysed | : 20 | Quote number | : EN/004/16 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT111_BH42_0.0 | CPT111_BH42_0.5 | CPT099_BH37_0.0 | CPT099_BH37_0.5 | ---- | | |
|--|--------------|------|---------|--------------------|--------|-----------------|-----------------|-----------------|-----------------|------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | Compound | Method | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 4.2 | 4.2 | 4.5 | 4.8 | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | <5 | <5 | <5 | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | <1 | <1 | <1 | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 14 | 11 | 34 | 32 | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 23 | 17 | 21 | 17 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | <2 | <2 | <2 | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 10 | 5 | 17 | 13 | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | <5 | <5 | <5 | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | <2 | <2 | <2 | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 7 | <5 | 14 | 6 | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 | <0.1 | <0.1 | <0.1 | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | <0.5 | <0.5 | <0.5 | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | 1 | <1 | 2 | 1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 210 | 240 | 250 | 250 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | <0.2 | <0.2 | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | 4.3 | 0.8 | 1.0 | <0.2 | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | <0.02 | <0.02 | <0.02 | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | <0.01 | <0.01 | <0.01 | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | <0.03 | <0.03 | <0.03 | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | <1 | <1 | <1 | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | | CPT111_BH42
_0.0 | CPT111_BH42
_0.5 | CPT099_BH37
_0.0 | CPT099_BH37
_0.5 | ---- |
|--|--------------|------|-------|--------------------|--------------|--------------|----------------------|----------------------|----------------------|----------------------|-------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 24-Jan-2019
08:40 | 24-Jan-2019
08:45 | 24-Jan-2019
10:00 | 24-Jan-2019
10:05 | ---- |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1900977-001 | EM1900977-002 | EM1900977-007 | EM1900977-008 | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 20 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 400 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4.8 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 16 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 50 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 2600 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 40000 | 120 | <50 | 140 | <50 | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT111_BH42
_0.0 | CPT111_BH42
_0.5 | CPT099_BH37
_0.0 | CPT099_BH37
_0.5 | ---- |
|--|--------------|------|---------|--------------------|--------------|---------------------|---------------------|---------------------|---------------------|-------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | EM1900977-001 | EM1900977-002 | EM1900977-007 | EM1900977-008 | ----- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.2 | 4.2 | 4.5 | 4.8 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | <1 | <1 | <1 | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 14 | 11 | 34 | 32 | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 23 | 17 | 21 | 17 | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | <2 | <2 | <2 | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 10 | 5 | 17 | 13 | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | <2 | <2 | <2 | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | <5 | <5 | <5 | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 7 | <5 | 14 | 6 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 | <0.1 | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | 1 | <1 | 2 | 1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 210 | 240 | 250 | 250 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | 4.3 | 0.8 | 1.0 | <0.2 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | <1 | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT111_BH42
_0.0 | CPT111_BH42
_0.5 | CPT099_BH37
_0.0 | CPT099_BH37
_0.5 | ---- |
|--|--------------|------|-------|--------------------|---------|---------|----------------------|----------------------|----------------------|----------------------|-------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 24-Jan-2019
08:40 | 24-Jan-2019
08:45 | 24-Jan-2019
10:00 | 24-Jan-2019
10:05 | ---- |
| | | | | | □□□□ | □□□□ | EM1900977-001 | EM1900977-002 | EM1900977-007 | EM1900977-008 | ----- |
| | | | | | □□□ □ | □□□ □ | | | | | |
| Compound | Method | LOR | Unit | | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 100 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 10 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 650 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 10000 | 120 | <50 | 140 | <50 | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT111_BH42_0.0 | CPT111_BH42_0.5 | CPT099_BH37_0.0 | CPT099_BH37_0.5 | ---- |
|--|--------------|------|---------|--------------------|--------------|----------------------|----------------------|----------------------|----------------------|-------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □ | □□□□
□□ □ | 24-Jan-2019
08:40 | 24-Jan-2019
08:45 | 24-Jan-2019
10:00 | 24-Jan-2019
10:05 | ----- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 4.2 | 4.2 | 4.5 | 4.8 | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | <5 | <5 | <5 | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | <1 | <1 | <1 | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 14 | 11 | 34 | 32 | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 23 | 17 | 21 | 17 | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | <2 | <2 | <2 | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 10 | 5 | 17 | 13 | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | <5 | <5 | <5 | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | <2 | <2 | <2 | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | <5 | <5 | <5 | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 7 | <5 | 14 | 6 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 | <0.1 | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | 1 | <1 | 2 | 1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 210 | 240 | 250 | 250 | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | <0.1 | <0.1 | <0.1 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | 4.3 | 0.8 | 1.0 | <0.2 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | <1 | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | | |
|---|--------------|------|-------|------------------|------|---------------|-------------------|-------------------|-------------------|-------------------|------|
| Sub-Matrix: SOIL | | | | Client sample ID | | | CPT111_BH42_0.0 | CPT111_BH42_0.5 | CPT099_BH37_0.0 | CPT099_BH37_0.5 | ---- |
| Sampling date/time | | | | | | | 24-Jan-2019 08:40 | 24-Jan-2019 08:45 | 24-Jan-2019 10:00 | 24-Jan-2019 10:05 | ---- |
| Compound | Method | LOR | Unit | | | EM1900977-001 | EM1900977-002 | EM1900977-007 | EM1900977-008 | ----- | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | <10 | <10 | <10 | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | 120 | <50 | 140 | <50 | <50 | ---- |

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900977 | Page | : 1 of 23 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 24-Jan-2019 |
| Order number | : 60592634 | Date Analysis Commenced | : 29-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 04-Feb-2019 |
| Sampler | : [REDACTED] | | |
| Site | : ---- | | |
| Quote number | : EN/004/16 | | |
| No. of samples received | : 46 | | |
| No. of samples analysed | : 20 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Senior Acid Sulfate Soil Chemist
Senior Inorganic Chemist
Metals Team Leader
Senior Inorganic Instrument Chemist
Senior Organic Chemist

Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2160800) | | | | | | | | | |
| EM1900958-002 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 7.3 | 7.3 | 0.00 | 0% - 20% |
| EM1900991-001 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 7.3 | 7.4 | 1.36 | 0% - 20% |
| EA029-A: pH Measurements (QC Lot: 2164181) | | | | | | | | | |
| EB1902011-001 | Anonymous | EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | 3.9 | 4.0 | 2.53 | 0% - 20% |
| | | EA029: pH OX (23B) | ---- | 0.1 | pH Unit | 4.1 | 4.0 | 2.47 | 0% - 20% |
| EA029-B: Acidity Trail (QC Lot: 2164181) | | | | | | | | | |
| EB1902011-001 | Anonymous | EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.113 | 0.112 | 0.00 | No Limit |
| | | EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | 0.133 | 0.134 | 0.00 | No Limit |
| | | EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | 0.021 | 0.022 | 6.02 | No Limit |
| | | EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 70 | 70 | 0.00 | 0% - 20% |
| | | EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | 83 | 84 | 0.00 | 0% - 20% |
| | | EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | 13 | 14 | 0.00 | No Limit |
| EA029-C: Sulfur Trail (QC Lot: 2164181) | | | | | | | | | |
| EB1902011-001 | Anonymous | EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | 0.030 | 0.030 | 0.00 | No Limit |
| | | EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | 0.031 | 0.031 | 0.00 | No Limit |
| | | EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-D: Calcium Values (QC Lot: 2164181) | | | | | | | | | |
| EB1902011-001 | Anonymous | EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | 0.032 | 0.034 | 4.88 | No Limit |
| | | EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | 0.033 | 0.034 | 0.00 | No Limit |
| | | EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | <0.020 | 0.00 | No Limit |

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA029-D: Calcium Values (QC Lot: 2164181) - continued | | | | | | | | | |
| EB1902011-001 | Anonymous | EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-E: Magnesium Values (QC Lot: 2164181) | | | | | | | | | |
| EB1902011-001 | Anonymous | EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | 0.033 | 0.034 | 0.00 | No Limit |
| | | EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | 0.034 | 0.035 | 0.00 | No Limit |
| | | EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | <0.020 | 0.00 | No Limit |
| | | EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA029-H: Acid Base Accounting (QC Lot: 2164181) | | | | | | | | | |
| EB1902011-001 | Anonymous | EA029: ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 0.00 | No Limit |
| | | EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.12 | 0.12 | 0.00 | No Limit |
| | | EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.12 | 0.12 | 0.00 | No Limit |
| | | EA029: Liming Rate | ---- | 1 | kg CaCO3/t | 6 | 6 | 0.00 | No Limit |
| | | EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 6 | 6 | 0.00 | No Limit |
| | | EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 74 | 74 | 0.00 | No Limit |
| | | EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 74 | 74 | 0.00 | No Limit |
| EA033-A: Actual Acidity (QC Lot: 2164182) | | | | | | | | | |
| EM1900977-002 | CPT111_BH42_0.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.08 | 0.08 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 53 | 52 | 0.00 | 0% - 20% |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 4.3 | 4.3 | 0.00 | 0% - 20% |
| EM1900977-038 | CPT093_BH226_0.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.05 | 0.04 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 30 | 28 | 7.51 | 0% - 50% |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 4.8 | 4.8 | 0.00 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2164182) | | | | | | | | | |
| EM1900977-002 | CPT111_BH42_0.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.006 | 0.006 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EM1900977-038 | CPT093_BH226_0.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.008 | 0.008 | 0.00 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA033-D: Retained Acidity (QC Lot: 2164182) | | | | | | | | | |
| EM1900977-002 | CPT111_BH42_0.5 | EA033: sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2159264) | | | | | | | | | |

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2159264) - continued | | | | | | | | | |
| EM1900857-003 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 5.2 | 5.3 | 3.08 | No Limit |
| EM1900963-001 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 17.3 | 17.0 | 1.74 | 0% - 50% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2159362) | | | | | | | | | |
| EM1900967-001 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 166 | 200 | 18.2 | 0% - 20% |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 42 | 41 | 3.23 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 99 | 80 | 21.6 | 0% - 50% | | |
| EM1900939-001 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 2 | <2 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 10 | 8 | 26.0 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 24 | 17 | 34.6 | No Limit | | |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2159364) | | | | | | | | | |
| EM1900967-001 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900939-001 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2159402) | | | | | | | | | |
| EM1900490-002 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900963-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2161424) | | | | | | | | | |
| EM1900963-002 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1900490-002 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2158830) | | | | | | | | | |
| EM1900977-001 | CPT111_BH42_0.0 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 210 | 270 | 23.1 | No Limit |
| EM1901000-007 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 60 | 60 | 0.00 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2158209) | | | | | | | | | |
| EM1900977-001 | CPT111_BH42_0.0 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1900998-020 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2158621) | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---------------------------------------|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2158621) - continued | | | | | | | | | |
| EM1900977-001 | CPT111_BH42_0.0 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | 0.5 | 0.6 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | 2.8 | 3.2 | 14.1 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | 1.0 | 1.1 | 11.7 | No Limit |
| EM1901072-002 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2158621) | | | | | | | | | |
| EM1900977-001 | CPT111_BH42_0.0 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1901072-002 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2158621) | | | | | | | | | |
| EM1900977-001 | CPT111_BH42_0.0 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EM1901072-002 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2158621) - continued | | | | | | | | | |
| EM1901072-002 | Anonymous | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit | | |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2158207) | | | | | | | | | |
| EM1900977-001 | CPT111_BH42_0.0 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1900998-020 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2158207) | | | | | | | | | |
| EM1900977-001 | CPT111_BH42_0.0 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2158207) - continued | | | | | | | | | |
| EM1900977-001 | CPT111_BH42_0.0 | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1900998-020 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2158207) | | | | | | | | | |
| EM1900977-001 | CPT111_BH42_0.0 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1900998-020 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2158207) - continued | | | | | | | | | |
| EM1900998-020 | Anonymous | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| EP075I: Organochlorine Pesticides (QC Lot: 2158207) | | | | | | | | | |
| EM1900977-001 | CPT111_BH42_0.0 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1900998-020 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |

Sub-Matrix: **WATER**



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2160603) - continued | | | | | | | | | |
| EM1900976-016 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.007 | 0.008 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.002 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | 0.004 | 0.003 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.004 | 0.004 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.044 | 0.044 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1901029-004 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2160604) | | | | | | | | | |
| EM1900977-043 | QC356 | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2160605) | | | | | | | | | |
| EM1900977-043 | QC356 | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2159316) | | | | | | | | | |
| EM1900908-002 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1901008-008 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2158818) | | | | | | | | | |
| EM1900606-132 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2158447) | | | | | | | | | |
| EM1900976-009 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2158105) | | | | | | | | | |
| EM1900976-001 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900976-013 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2158105) | | | | | | | | | |
| EM1900976-001 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|----------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2158105) - continued | | | | | | | | | |
| EM1900976-001 | Anonymous | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EM1900976-013 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2158105) | | | | | | | | | |
| EM1900976-001 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900976-013 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2158105) | | | | | | | | | |
| EM1900976-001 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900976-013 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2158106) | | | | | | | | | |
| EM1900976-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900976-013 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2158106) | | | | | | | | | |
| EM1900976-001 | Anonymous | EP080: C6 - C10 Fraction | C6 C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |

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 Work Order : EM1900977
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2158106) - continued | | | | | | | | | |
| EM1900976-013 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2158106) | | | | | | | | | |
| EM1900976-001 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EM1900976-013 | Anonymous | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA029-A: pH Measurements (QCLot: 2164181) | | | | | | | | |
| EA029: pH KCl (23A) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 100 | 70 | 130 |
| EA029: pH OX (23B) | ---- | 0.1 | pH Unit | <0.1 | 4.5 pH Unit | 93.3 | 70 | 130 |
| EA029-B: Acidity Trail (QCLot: 2164181) | | | | | | | | |
| EA029: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 76.9 | 70 | 130 |
| EA029: Titratable Peroxide Acidity (23G) | ---- | 2 | mole H+ / t | <2 | 29.1 mole H+ / t | 102 | 70 | 130 |
| EA029: Titratable Sulfidic Acidity (23H) | ---- | 2 | mole H+ / t | <2 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Peroxide Acidity (s-23G) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Titratable Sulfidic Acidity (s-23H) | ---- | 0.02 | % pyrite S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-C: Sulfur Trail (QCLot: 2164181) | | | | | | | | |
| EA029: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.020 | 0.052 % S | 105 | 70 | 130 |
| EA029: Peroxide Sulfur (23De) | ---- | 0.02 | % S | <0.020 | 0.145 % S | 107 | 70 | 130 |
| EA029: Peroxide Oxidisable Sulfur (23E) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Peroxide Oxidisable Sulfur (a-23E) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029-D: Calcium Values (QCLot: 2164181) | | | | | | | | |
| EA029: KCl Extractable Calcium (23Vh) | ---- | 0.02 | % Ca | <0.020 | 0.151 % Ca | 126 | 70 | 130 |
| EA029: Peroxide Calcium (23Wh) | ---- | 0.02 | % Ca | <0.020 | 0.296 % Ca | 108 | 70 | 130 |
| EA029: Acid Reacted Calcium (23X) | ---- | 0.02 | % Ca | <0.020 | ---- | ---- | ---- | ---- |
| EA029: acidity - Acid Reacted Calcium (a-23X) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Calcium (s-23X) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-E: Magnesium Values (QCLot: 2164181) | | | | | | | | |
| EA029: KCl Extractable Magnesium (23Sm) | ---- | 0.02 | % Mg | <0.020 | 0.176 % Mg | 115 | 70 | 130 |
| EA029: Peroxide Magnesium (23Tm) | ---- | 0.02 | % Mg | <0.020 | 0.175 % Mg | 124 | 70 | 130 |
| EA029: Acid Reacted Magnesium (23U) | ---- | 0.02 | % Mg | <0.020 | ---- | ---- | ---- | ---- |
| EA029: Acidity - Acid Reacted Magnesium (a-23U) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: sulfidic - Acid Reacted Magnesium (s-23U) | ---- | 0.02 | % S | <0.020 | ---- | ---- | ---- | ---- |
| EA029-H: Acid Base Accounting (QCLot: 2164181) | | | | | | | | |
| EA029: ANC Fineness Factor | ---- | 0.5 | - | <0.5 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA029: Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA029: Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | <1 | ---- | ---- | ---- | ---- |



| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA033-A: Actual Acidity (QCLot: 2164182) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 86.5 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2164182) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 95.9 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-D: Retained Acidity (QCLot: 2164182) | | | | | | | | |
| EA033: Net Acid Soluble Sulfur (20Je) | ---- | 0.02 | % S | <0.02 | ---- | ---- | ---- | ---- |
| EA033: acidity - Net Acid Soluble Sulfur (a-20J) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033: sulfidic - Net Acid Soluble Sulfur (s-20J) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033: KCl Extractable Sulfur (23Ce) | ---- | 0.02 | % S | <0.02 | 0.052 % S | 105 | 70 | 130 |
| EA033: HCl Extractable Sulfur (20Be) | ---- | 0.02 | % S | <0.02 | 0.027 % S | 88.1 | 70 | 130 |
| EG005T: Total Metals by ICP-AES (QCLot: 2159362) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 93.7 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 92.6 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 91.5 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 92.3 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 95.5 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 99.8 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 97.0 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 93.7 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 106 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 100 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2159364) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 83.8 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2159402) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 81.3 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2161424) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 98.9 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2158830) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 100 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2158209) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 106 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2158621) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 89.4 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 86.9 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 84.9 | 66 | 119 |

Laboratory Control Spike (LCS) Report

Recovery Limits (%)

High

EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2158207)



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2158207) - continued | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 102 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 97.4 | 65 | 126 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 104 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 113 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 109 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 119 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 100 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 116 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 115 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 126 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2158207) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 105 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 109 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 104 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 1 mg/kg | 104 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 106 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 108 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 105 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 113 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 118 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 120 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 122 | 72 | 134 |
| EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 124 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 125 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2158207) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 110 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 94.1 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 126 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 111 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 106 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 103 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 105 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 102 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 112 | 64 | 137 |



Sub-Matrix: **SOIL**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|---|-------------|------|-------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2158207) - continued | | | | | | | | |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 113 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 112 | 72 | 132 |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 118 | 42 | 160 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 92.8 | 55 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 117 | 73 | 132 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 124 | 75 | 134 |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 116 | 73 | 133 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 125 | 67 | 133 |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 131 | 67 | 135 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2158208) | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 93.2 | 70 | 120 |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 95.8 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 92.7 | 77 | 117 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2158621) | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 80.2 | 63 | 122 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2158208) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 97.4 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 94.7 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 87.7 | 68 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2158621) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 79.3 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- |

Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|--|-----------|--------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2160603) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.3 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 96.0 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 91.1 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.9 | 83 | 105 |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 94.5 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 92.4 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 83 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 94.4 | 85 | 109 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2160604) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 103 | 84 | 116 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2160605) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 108 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2159316) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 101 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2158818) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 91.2 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2158447) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 108 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2158213) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 90.6 | 48 | 124 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2158105) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 95.5 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2158105) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 93.9 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 90.2 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 97.2 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 91.2 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 96.2 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 89.8 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 85.2 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 97.4 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 91.4 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 100 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 94.0 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 92.2 | 76 | 112 |
| EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 100 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 97.0 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2158105) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 97.2 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 94.5 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 95.6 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 93.0 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2158105) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 96.2 | 79 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2158214) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 10 µg/L | 60.8 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 10 µg/L | 68.8 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 10 µg/L | 59.1 | 53 | 117 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|--|-----------------------|------|------|---------------------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| | | | | | | | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2158214) - continued | | | | | | | | |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 10 µg/L | 62.0 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 10 µg/L | 61.8 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 10 µg/L | 63.6 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 10 µg/L | 62.9 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 10 µg/L | 64.4 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 10 µg/L | 65.7 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 10 µg/L | 63.9 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2
205-82-3 | 1 | µg/L | <1.0 | 10 µg/L | 74.4 | 56 | 131 |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 10 µg/L | 78.3 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 81.4 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 10 µg/L | 81.0 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 10 µg/L | 89.8 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 10 µg/L | 74.1 | 56 | 124 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2158227) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 64.4 | 54 | 117 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 70.6 | 46 | 116 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 75.2 | 61 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 4 | µg/L | <4 | 10 µg/L | 79.2 | 45 | 116 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 74.5 | 57 | 131 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 77.5 | 42 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 2 | µg/L | <2 | 10 µg/L | 125 | 54 | 136 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 2 | µg/L | <2 | 20 µg/L | 110 | 53 | 125 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 2 | µg/L | <2 | 20 µg/L | 53.6 | 32 | 122 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2158227) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 4 | µg/L | <4 | 10 µg/L | 30.2 | 18 | 51 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 4 | µg/L | <4 | 10 µg/L | 63.4 | 49 | 106 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | <4 | 20 µg/L | 60.4 | 41 | 91 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 4 | µg/L | <4 | 10 µg/L | 79.8 | 48 | 120 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 4 | µg/L | <4 | 10 µg/L | 77.1 | 47 | 128 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 100 | µg/L | <100 | 60 µg/L | 51.4 | 41 | 130 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 50 | µg/L | <50 | 60 µg/L | 22.5 | 19 | 49 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 50 | µg/L | <50 | 60 µg/L | 58.6 | 47 | 126 |
| EP075-EM: Dinoseb | 88-85-7 | 50 | µg/L | <50 | 60 µg/L | 65.2 | 49 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 50 | µg/L | <50 | 50 µg/L | 74.6 | 61 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2158227) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 10 µg/L | 74.1 | 57 | 126 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB) Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------|------|--------|--------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2158227) - continued | | | | | | | | |
| EP075-EM: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 69.1 | 62 | 134 |
| EP075-EM: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 70.8 | 58 | 133 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 72.0 | 60 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 10 µg/L | 71.1 | 59 | 132 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 10 µg/L | 77.1 | 61 | 137 |
| EP075-EM: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 10 µg/L | 68.5 | 59 | 130 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 10 µg/L | 75.7 | 59 | 135 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.5 | µg/L | <0.5 | 10 µg/L | 80.5 | 59 | 128 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2158106) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 93.6 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2158215) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 76.9 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 81.3 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 81.0 | 55 | 130 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2158106) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 91.4 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2158215) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 84.2 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 80.8 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 91.9 | 53 | 136 |
| EP080: BTEXN (QCLot: 2158106) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 93.1 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 98.8 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 95.4 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 98.9 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 102 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 123 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| Laboratory sample ID | | | | Matrix Spike (MS) Report | | | |
|---|------------------|-----------------|-----------|--------------------------|-------------------|---------------------|------|
| | | | | Spike Concentration | Spike Recovery(%) | Recovery Limits (%) | |
| | | | | | MS | Low | High |
| Client sample ID | Method: Compound | CAS Number | | | | | |
| EG005T: Total Metals by ICP-AES (QCLot: 2159362) | | | | | | | |
| EM1900939-002 | Anonymous | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 99.8 | 78 | 124 |

Matrix Spike (MS) Report

| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
|---|------------------|---|------------|---------------|------------------|---------------------|------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2159362) - continued | | | | | | | |
| EM1900939-002 | Anonymous | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 90.6 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 103 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 90.8 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 97.5 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 91.4 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 91.3 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 96.2 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2159364) | | | | | | | |
| EM1900939-002 | Anonymous | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 89.0 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2159402) | | | | | | | |
| EM1900490-006 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | 65.8 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2161424) | | | | | | | |
| EM1900490-006 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 99.4 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2158830) | | | | | | | |
| EM1900977-002 | CPT111_BH42_0.5 | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 103 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2158209) | | | | | | | |
| EM1900977-008 | CPT099_BH37_0.5 | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 121 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2158621) | | | | | | | |
| EM1900977-002 | CPT111_BH42_0.5 | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | # 42.9 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 58.3 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2158621) | | | | | | | |
| EM1900977-002 | CPT111_BH42_0.5 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | # 19.4 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | # 47.6 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 76.6 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2158207) | | | | | | | |
| EM1900977-002 | CPT111_BH42_0.5 | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 100.0 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 121 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 75.3 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2158207) | | | | | | | |
| EM1900977-002 | CPT111_BH42_0.5 | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 101 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 96.8 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2158207) | | | | | | | |
| EM1900977-002 | CPT111_BH42_0.5 | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 101 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 108 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2158208) | | | | | | | |

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|-------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2158208) - continued | | | | | | | |
| EM1900977-007 | CPT099_BH37_0.0 | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 94.2 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 97.5 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 94.7 | 64 | 118 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2158621) | | | | | | | |
| EM1900977-002 | CPT111_BH42_0.5 | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 51.8 | 43 | 111 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2158208) | | | | | | | |
| EM1900977-007 | CPT099_BH37_0.0 | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 98.5 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 96.6 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 91.7 | 44 | 126 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2158621) | | | | | | | |
| EM1900977-002 | CPT111_BH42_0.5 | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 55.4 | 42 | 106 |
| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2160603) | | | | | | | |
| EM1900976-016 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 96.4 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 93.0 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 88.4 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 88.0 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 92.3 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 91.7 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2160605) | | | | | | | |
| EM1901017-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 114 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2159316) | | | | | | | |
| EM1900977-043 | QC356 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 103 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2158818) | | | | | | | |
| EM1900761-062 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 111 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2158447) | | | | | | | |
| EM1900976-010 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 106 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2158105) | | | | | | | |
| EM1900976-002 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 102 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 86.5 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2158105) | | | | | | | |
| EM1900976-002 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 99.0 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2158106) | | | | | | | |

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 Work Order : EM1900977
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2158106) - continued | | | | | | | |
| EM1900976-002 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 83.2 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2158106) | | | | | | | |
| EM1900976-002 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 80.4 | 44 | 122 |
| EP080: BTEXN (QCLot: 2158106) | | | | | | | |
| EM1900976-002 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 98.0 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 102 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : EM1900977

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Client : AECOM Australia Pty Ltd
Contact :
Project : 60592634
Site :
Sampler :
Order number : 60592634

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 24-Jan-2019
Issue Date : 04-Feb-2019
No. of samples received : 46
No. of samples analysed : 20

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|---------------------------|------------|--------|---------|--|
| Matrix Spike (MS) Recoveries | | | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | EM1900977--002 | CPT111_BH42_0.5 | Benzene | 71-43-2 | 42.9 % | 50-138% | Recovery less than lower data quality objective |
| EP074I: Volatile Halogenated Compounds | EM1900977--002 | CPT111_BH42_0.5 | 1,1-Dichloroethene | 75-35-4 | 19.4 % | 26-141% | Recovery less than lower data quality objective |
| EP074I: Volatile Halogenated Compounds | EM1900977--002 | CPT111_BH42_0.5 | Trichloroethene | 79-01-6 | 47.6 % | 50-134% | Recovery less than lower data quality objective |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
QC356 | ---- | ---- | ---- | 29-Jan-2019 | 24-Jan-2019 | 5 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 7 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 4 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 1 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 8 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 7 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 4 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 8 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | 31-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 31-Jan-2019 | ✓ |
| EA029-A: pH Measurements | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT092_BH224_0.5, | CPT092_BH224_1.5 | 24-Jan-2019 | 01-Feb-2019 | 19-Oct-2021 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |
| EA029-B: Acidity Trail | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT092_BH224_0.5, | CPT092_BH224_1.5 | 24-Jan-2019 | 01-Feb-2019 | 19-Oct-2021 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |
| EA029-C: Sulfur Trail | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT092_BH224_0.5, | CPT092_BH224_1.5 | 24-Jan-2019 | 01-Feb-2019 | 19-Oct-2021 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |
| EA029-D: Calcium Values | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT092_BH224_0.5, | CPT092_BH224_1.5 | 24-Jan-2019 | 01-Feb-2019 | 19-Oct-2021 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |
| EA029-E: Magnesium Values | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT092_BH224_0.5, | CPT092_BH224_1.5 | 24-Jan-2019 | 01-Feb-2019 | 19-Oct-2021 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |
| EA029-F: Excess Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT092_BH224_0.5, | CPT092_BH224_1.5 | 24-Jan-2019 | 01-Feb-2019 | 19-Oct-2021 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |
| EA029-G: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT092_BH224_0.5, | CPT092_BH224_1.5 | 24-Jan-2019 | 01-Feb-2019 | 19-Oct-2021 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |
| EA029-H: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA029)
CPT092_BH224_0.5, | CPT092_BH224_1.5 | 24-Jan-2019 | 01-Feb-2019 | 19-Oct-2021 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT111_BH42_0.5,
CPT099_BH37_0.5,
CPT093_BH227_0.5,
CPT092_BH223_0.5,
CPT093_BH225_0.5,
CPT093_BH226_0.5, | CPT111_BH42_1.5,
CPT099_BH37_1.5,
CPT093_BH227_1.5,
CPT092_BH223_2.0,
CPT093_BH225_1.5,
CPT093_BH226_1.5 | 24-Jan-2019 | 01-Feb-2019 | 24-Jan-2020 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT111_BH42_0.5,
CPT099_BH37_0.5,
CPT093_BH227_0.5,
CPT092_BH223_0.5,
CPT093_BH225_0.5,
CPT093_BH226_0.5, | CPT111_BH42_1.5,
CPT099_BH37_1.5,
CPT093_BH227_1.5,
CPT092_BH223_2.0,
CPT093_BH225_1.5,
CPT093_BH226_1.5 | 24-Jan-2019 | 01-Feb-2019 | 24-Jan-2020 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT111_BH42_0.5,
CPT099_BH37_0.5,
CPT093_BH227_0.5,
CPT092_BH223_0.5,
CPT093_BH225_0.5,
CPT093_BH226_0.5, | CPT111_BH42_1.5,
CPT099_BH37_1.5,
CPT093_BH227_1.5,
CPT092_BH223_2.0,
CPT093_BH225_1.5,
CPT093_BH226_1.5 | 24-Jan-2019 | 01-Feb-2019 | 24-Jan-2020 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT111_BH42_0.5,
CPT099_BH37_0.5,
CPT093_BH227_0.5,
CPT092_BH223_0.5,
CPT093_BH225_0.5,
CPT093_BH226_0.5, | CPT111_BH42_1.5,
CPT099_BH37_1.5,
CPT093_BH227_1.5,
CPT092_BH223_2.0,
CPT093_BH225_1.5,
CPT093_BH226_1.5 | 24-Jan-2019 | 01-Feb-2019 | 24-Jan-2020 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT111_BH42_0.5,
CPT099_BH37_0.5,
CPT093_BH227_0.5,
CPT092_BH223_0.5,
CPT093_BH225_0.5,
CPT093_BH226_0.5, | CPT111_BH42_1.5,
CPT099_BH37_1.5,
CPT093_BH227_1.5,
CPT092_BH223_2.0,
CPT093_BH225_1.5,
CPT093_BH226_1.5 | 24-Jan-2019 | 01-Feb-2019 | 24-Jan-2020 | ✓ | 01-Feb-2019 | 02-May-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 07-Feb-2019 | ✓ |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | 31-Jan-2019 | 23-Jul-2019 | ✓ | 01-Feb-2019 | 23-Jul-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | 31-Jan-2019 | 21-Feb-2019 | ✓ | 01-Feb-2019 | 21-Feb-2019 | ✓ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | 30-Jan-2019 | 21-Feb-2019 | ✓ | 30-Jan-2019 | 06-Feb-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | 30-Jan-2019 | 07-Feb-2019 | ✓ | 31-Jan-2019 | 13-Feb-2019 | ✓ |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | 30-Jan-2019 | 21-Feb-2019 | ✓ | 31-Jan-2019 | 21-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 31-Jan-2019 | ✓ |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 31-Jan-2019 | ✓ |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 31-Jan-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT111_BH42_0.0,
CPT099_BH37_0.0, | CPT111_BH42_0.5,
CPT099_BH37_0.5 | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | | | | | | | |
| CPT111_BH42_0.0, | CPT111_BH42_0.5, | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| CPT099_BH37_0.0, | CPT099_BH37_0.5 | | | | | | | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM) | | | | | | | | |
| CPT111_BH42_0.0, | CPT111_BH42_0.5, | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| CPT099_BH37_0.0, | CPT099_BH37_0.5 | | | | | | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM) | | | | | | | | |
| CPT111_BH42_0.0, | CPT111_BH42_0.5, | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| CPT099_BH37_0.0, | CPT099_BH37_0.5 | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | | | | | | | |
| CPT111_BH42_0.0, | CPT111_BH42_0.5, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 31-Jan-2019 | ✓ |
| CPT099_BH37_0.0, | CPT099_BH37_0.5 | | | | | | | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM) | | | | | | | | |
| CPT111_BH42_0.0, | CPT111_BH42_0.5, | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| CPT099_BH37_0.0, | CPT099_BH37_0.5 | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | | | | | | | |
| CPT111_BH42_0.0, | CPT111_BH42_0.5, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 31-Jan-2019 | ✓ |
| CPT099_BH37_0.0, | CPT099_BH37_0.5 | | | | | | | |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
QC356 | 24-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 24-Jan-2019 | ✖ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Unspecified (EG020B-F)
QC356 | 24-Jan-2019 | ---- | ---- | ---- | 30-Jan-2019 | 23-Jul-2019 | ✔ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Unspecified (EG035F)
QC356 | 24-Jan-2019 | ---- | ---- | ---- | 31-Jan-2019 | 07-Feb-2019 | ✔ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Clear Plastic Bottle - NaOH (EG050F)
QC356 | 24-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 21-Feb-2019 | ✔ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| White Plastic Bottle-NaOH (EK026SF)
QC356 | 24-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 07-Feb-2019 | ✔ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
QC356 | 24-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 21-Feb-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
QC356 | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC356 | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC356 | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC356 | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC356 | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
QC356 | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC356 | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC356 | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075-EM)
QC356 | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC356 | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC356,
QC563, | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |
| QC456,
QC564 | | | | | | | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC356 | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC356,
QC563, | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |
| QC456,
QC564 | | | | | | | |

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Work Order : EM1900977
Client : AECOM Australia Pty Ltd
Project : 60592634



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|-----------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP080: BTEXN | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080) | | | | | | | | |
| QC356,
QC563, | QC456,
QC564 | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✔ | 29-Jan-2019 | 07-Feb-2019 | ✔ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 4 | 25.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Total Mercury by FIMS | EG035T | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 8 | 12.50 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 13 | 15.38 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 4 | 25.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 9 | 11.11 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 2 | 11 | 18.18 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 7 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 1 | 5 | 20.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 4 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 1 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 3 | 33.33 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 8 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 20 | 10.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 2 | 14 | 14.29 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 8 | 12.50 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 13 | 7.69 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 9 | 11.11 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 7 | 14.29 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 4 | 25.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 7 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 4 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 1 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 8 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|---------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Suspension Peroxide Oxidation-Combined Acidity and Sulphate | EA029 | SOIL | In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|---|
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Preparation Methods | Method | Matrix | Method Descriptions |
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl2 extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |

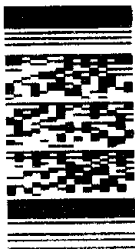


| Preparation Methods | Method | Matrix | Method Descriptions |
|--|----------|--------|---|
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

Q44AN(EV)-007-FM1

COC Page of

Telephone : + 61-3-8549 9800



**Environmental Division
Melbourne
Work Order Reference
EM1901029**

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1901029**

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 2 |
| Order number | : 60592634 / Task 1.0 | Quote number | : EB2017AECOMAU0014 (EN/004/16) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : GIJPP | | |
| Sampler | : [REDACTED] | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 25-Jan-2019 10:20 | Issue Date | : 29-Jan-2019 |
| Client Requested Due Date | : 04-Feb-2019 | Scheduled Reporting Date | : 04-Feb-2019 |

Delivery Details

| | | | |
|----------------------|-----------|------------------------------------|------------------------|
| Mode of Delivery | : Carrier | Security Seal | : Not Available |
| No. of coolers/boxes | : 1 | Temperature | : 11.0°C - Ice present |
| Receipt Detail | : | No. of samples received / analysed | : 5 / 5 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

☐ **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - EG050T
Total Hexavalent Chromium | WATER - NT-14
Extended Water Suite B | WATER - W-18
TRH(C6 - C9)/BTEXN | WATER - W-23
SVOC/VOC | WATER - W-30
11 Metals |
|----------------------|-----------------------------|------------------|---|---|------------------------------------|--------------------------|---------------------------|
| EM1901029-001 | 25-Jan-2019 00:00 | MW01_25/1/19 | | ☐ | | | |
| EM1901029-002 | 25-Jan-2019 00:00 | MW05_25/1/19 | ☐ | ☐ | | ☐ | ☐ |
| EM1901029-003 | 25-Jan-2019 00:00 | QC102_25/1/19 | ☐ | ☐ | | ☐ | ☐ |
| EM1901029-004 | 25-Jan-2019 00:00 | QC303_25/1/19 | ☐ | ☐ | | ☐ | ☐ |
| EM1901029-005 | 25-Jan-2019 00:00 | QC404_25/1/19 | | | ☐ | | |

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email

AP_CustomerService.ANZ@aecom.com

- Chain of Custody (CoC) (COC)

Email

AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)

Email

- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)

Email

- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)

Email

- A4 - AU Sample Receipt Notification - Environmental HT (SRN)

Email

- Chain of Custody (CoC) (COC)

Email

- Chromatogram (CHROM)

Email

- EDI Format - ENMRG (ENMRG)

Email

- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)

Email

- EDI Format - ESDAT (ESDAT)

Email

- EDI Format - XTab (XTAB)

Email

- Electronic SRN for EQUIS (ESRN_EQUIS)

Email

- *AU Certificate of Analysis - NATA (COA)

Email

- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)

Email

- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)

Email

- A4 - AU Sample Receipt Notification - Environmental HT (SRN)

Email

- Chain of Custody (CoC) (COC)

Email

- Chromatogram (CHROM)

Email

- EDI Format - ENMRG (ENMRG)

Email

- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)

Email

- EDI Format - ESDAT (ESDAT)

Email

- EDI Format - XTab (XTAB)

Email

- Electronic SRN for EQUIS (ESRN_EQUIS)

Email

CERTIFICATE OF ANALYSIS

Work Order : **EM1901029**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number : 60592634 / Task 1.0
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP
Quote number : EN/004/16
No. of samples received : 5
No. of samples analysed : 5

Page : 1 of 12
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 25-Jan-2019 10:20
Date Analysis Commenced : 25-Jan-2019
Issue Date : 05-Feb-2019 17:51



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|-------------------------------------|---------------------------------------|
| [REDACTED] | Non-metals prep supervisor | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Metals Team Leader | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA010-P: Electrical Conductivity @ 25°C was analysed by manual method (EA010).
- Ionic Balance out of acceptable limits for sample #2 due to analytes not quantified in this report.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EP075: 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- EA016: Calculated TDS is determined from Electrical conductivity using a conversion factor of 0.65.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW01_25/1/19 | MW05_25/1/19 | QC102_25/1/19 | QC303_25/1/19 | QC404_25/1/19 |
|---|-------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1901029-001 | EM1901029-002 | EM1901029-003 | EM1901029-004 | EM1901029-005 |
| | | | | | Result | Result | Result | Result | Result |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 7.38 | 7.11 | 7.19 | 6.23 | ---- |
| EA006: Sodium Adsorption Ratio (SAR) | | | | | | | | | |
| ^ Sodium Adsorption Ratio | ---- | 0.01 | - | | 23.0 | 15.3 | 15.2 | 0.12 | ---- |
| EA010P: Conductivity by PC Titrator | | | | | | | | | |
| Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | | 7280 | 7850 | 8190 | 5 | ---- |
| EA016: Calculated TDS (from Electrical Conductivity) | | | | | | | | | |
| Total Dissolved Solids (Calc.) | ---- | 1 | mg/L | | 4730 | 5100 | 5320 | 3 | ---- |
| EA065: Total Hardness as CaCO3 | | | | | | | | | |
| Total Hardness as CaCO3 | ---- | 1 | mg/L | | 804 | 1140 | 1130 | <10 | ---- |
| ED037P: Alkalinity by PC Titrator | | | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | | <1 | <1 | <1 | <1 | ---- |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | | <1 | <1 | <1 | <1 | ---- |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | | 264 | 292 | 292 | 2 | ---- |
| Total Alkalinity as CaCO3 | ---- | 1 | mg/L | | 264 | 292 | 292 | 2 | ---- |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | | |
| Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | | 404 | 128 | 129 | <1 | ---- |
| ED045G: Chloride by Discrete Analyser | | | | | | | | | |
| Chloride | 16887-00-6 | 1 | mg/L | | 2960 | 2950 | 2890 | <1 | ---- |
| ED093F: Dissolved Major Cations | | | | | | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | | 134 | 133 | 129 | <1 | ---- |
| Magnesium | 7439-95-4 | 1 | mg/L | | 114 | 197 | 197 | <1 | ---- |
| Sodium | 7440-23-5 | 1 | mg/L | | 1500 | 1190 | 1180 | <1 | ---- |
| Potassium | 7440-09-7 | 1 | mg/L | | <1 | <1 | <1 | <1 | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Aluminium | 7429-90-5 | 0.01 | mg/L | | ---- | 0.02 | 0.01 | <0.01 | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | ---- | 0.004 | 0.004 | <0.001 | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | ---- | <0.0001 | <0.0001 | <0.0001 | ---- |
| Chromium | 7440-47-3 | 0.001 | mg/L | | ---- | <0.001 | <0.001 | <0.001 | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | ---- | <0.001 | <0.001 | <0.001 | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | ---- | 0.005 | 0.005 | <0.001 | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | ---- | <0.001 | <0.001 | <0.001 | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | ---- | <0.01 | <0.01 | <0.01 | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | ---- | 0.042 | 0.047 | <0.005 | ---- |
| Iron | 7439-89-6 | 0.05 | mg/L | | ---- | 1.70 | 1.95 | <0.05 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW01_25/1/19 | MW05_25/1/19 | QC102_25/1/19 | QC303_25/1/19 | QC404_25/1/19 |
|---|------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1901029-001 | EM1901029-002 | EM1901029-003 | EM1901029-004 | EM1901029-005 |
| | | | | | Result | Result | Result | Result | Result |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | ---- | <0.0001 | <0.0001 | <0.0001 | ---- |
| EG050T: Total Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | ---- | <0.01 | <0.01 | <0.01 | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | 0.1 | 0.2 | 0.2 | <0.1 | ---- |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | | 0.02 | 0.17 | 0.15 | <0.01 | ---- |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| EK058G: Nitrate as N by Discrete Analyser | | | | | | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | | 0.04 | 0.05 | 0.06 | <0.01 | ---- |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.01 | mg/L | | 0.04 | 0.05 | 0.06 | <0.01 | ---- |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | | 0.8 | 0.3 | 0.3 | <0.1 | ---- |
| EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser | | | | | | | | | |
| ^ Total Nitrogen as N | ---- | 0.1 | mg/L | | 0.8 | 0.4 | 0.4 | <0.1 | ---- |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | | 0.48 | 0.07 | 0.09 | <0.01 | ---- |
| EK071G: Reactive Phosphorus as P by discrete analyser | | | | | | | | | |
| Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| EN055: Ionic Balance | | | | | | | | | |
| Total Anions | ---- | 0.01 | meq/L | | 97.2 | 91.7 | 90.0 | 0.04 | ---- |
| Total Cations | ---- | 0.01 | meq/L | | 81.3 | 74.6 | 74.0 | <0.01 | ---- |
| Ionic Balance | ---- | 0.01 | % | | 8.89 | 10.3 | 9.79 | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| Isopropylbenzene | 98-82-8 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| n-Propylbenzene | 103-65-1 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| sec-Butylbenzene | 135-98-8 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| tert-Butylbenzene | 98-06-6 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW01_25/1/19 | MW05_25/1/19 | QC102_25/1/19 | QC303_25/1/19 | QC404_25/1/19 |
|---|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1901029-001 | EM1901029-002 | EM1901029-003 | EM1901029-004 | EM1901029-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP074A: Monocyclic Aromatic Hydrocarbons - Continued | | | | | | | | | |
| p-Isopropyltoluene | 99-87-6 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| n-Butylbenzene | 104-51-8 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| EP074B: Oxygenated Compounds | | | | | | | | | |
| Vinyl Acetate | 108-05-4 | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| EP074C: Sulfonated Compounds | | | | | | | | | |
| Carbon disulfide | 75-15-0 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| EP074D: Fumigants | | | | | | | | | |
| 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| Chloromethane | 74-87-3 | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| Bromomethane | 74-83-9 | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| Chloroethane | 75-00-3 | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| Trichlorofluoromethane | 75-69-4 | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| Iodomethane | 74-88-4 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| Dibromomethane | 74-95-3 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | | ---- | <5 | <5 | <5 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW01_25/1/19 | MW05_25/1/19 | QC102_25/1/19 | QC303_25/1/19 | QC404_25/1/19 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1901029-001 | EM1901029-002 | EM1901029-003 | EM1901029-004 | EM1901029-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Naphthalene | 91-20-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Acenaphthylene | 208-96-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Acenaphthene | 83-32-9 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Fluorene | 86-73-7 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Phenanthrene | 85-01-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Anthracene | 120-12-7 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Fluoranthene | 206-44-0 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Pyrene | 129-00-0 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Benzo(a)anthracene | 56-55-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Chrysene | 218-01-9 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 4 | µg/L | | ---- | <4 | <4 | <4 | ---- |
| 7.12-Dimethylbenz(a)anthracene | 57-97-6 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Benzo(a)pyrene | 50-32-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| ^ Sum of PAHs | ---- | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| EP075C: Phthalate Esters | | | | | | | | | |
| Dimethyl phthalate | 131-11-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Diethyl phthalate | 84-66-2 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | | ---- | <10 | <10 | <10 | ---- |
| Di-n-octylphthalate | 117-84-0 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| EP075D: Nitrosamines | | | | | | | | | |
| N-Nitrosomethylethylamine | 10595-95-6 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| N-Nitrosodiethylamine | 55-18-5 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| N-Nitrosopyrrolidine | 930-55-2 | 4 | µg/L | | ---- | <4 | <4 | <4 | ---- |
| N-Nitrosomorpholine | 59-89-2 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW01_25/1/19 | MW05_25/1/19 | QC102_25/1/19 | QC303_25/1/19 | QC404_25/1/19 |
|---|------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1901029-001 | EM1901029-002 | EM1901029-003 | EM1901029-004 | EM1901029-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP075D: Nitrosamines - Continued | | | | | | | | | |
| N-Nitrosodi-n-propylamine | 621-64-7 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| N-Nitrosopiperidine | 100-75-4 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| N-Nitrosodibutylamine | 924-16-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| N-Nitrosodiphenyl & Diphenylamine | 86-30-6 122-39-4 | 4 | µg/L | | ---- | <4 | <4 | <4 | ---- |
| Methapyrilene | 91-80-5 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| EP075E: Nitroaromatics and Ketones | | | | | | | | | |
| 2-Picoline | 109-06-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Acetophenone | 98-86-2 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Nitrobenzene | 98-95-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Isophorone | 78-59-1 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 2,6-Dinitrotoluene | 606-20-2 | 4 | µg/L | | ---- | <4 | <4 | <4 | ---- |
| 2,4-Dinitrotoluene | 121-14-2 | 4 | µg/L | | ---- | <4 | <4 | <4 | ---- |
| 1-Naphthylamine | 134-32-7 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 4-Nitroquinoline-N-oxide | 56-57-5 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 5-Nitro-o-toluidine | 99-55-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Azobenzene | 103-33-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 1,3,5-Trinitrobenzene | 99-35-4 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Phenacetin | 62-44-2 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 4-Aminobiphenyl | 92-67-1 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Pentachloronitrobenzene | 82-68-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Pronamide | 23950-58-5 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Dimethylaminoazobenzene | 60-11-7 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Chlorobenzilate | 510-15-6 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| EP075F: Haloethers | | | | | | | | | |
| Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| EP075G: Chlorinated Hydrocarbons | | | | | | | | | |
| 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Hexachloroethane | 67-72-1 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW01_25/1/19 | MW05_25/1/19 | QC102_25/1/19 | QC303_25/1/19 | QC404_25/1/19 |
|---|-------------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1901029-001 | EM1901029-002 | EM1901029-003 | EM1901029-004 | EM1901029-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP075G: Chlorinated Hydrocarbons - Continued | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Hexachloropropylene | 1888-71-7 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Hexachlorobutadiene | 87-68-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | | ---- | <10 | <10 | <10 | ---- |
| Pentachlorobenzene | 608-93-5 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | | ---- | <4 | <4 | <4 | ---- |
| EP075H: Anilines and Benzidines | | | | | | | | | |
| Aniline | 62-53-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 4-Chloroaniline | 106-47-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 2-Nitroaniline | 88-74-4 | 4 | µg/L | | ---- | <4 | <4 | <4 | ---- |
| 3-Nitroaniline | 99-09-2 | 4 | µg/L | | ---- | <4 | <4 | <4 | ---- |
| Dibenzofuran | 132-64-9 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 4-Nitroaniline | 100-01-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Carbazole | 86-74-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| beta-BHC | 319-85-7 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| gamma-BHC | 58-89-9 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| delta-BHC | 319-86-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Heptachlor | 76-44-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Aldrin | 309-00-2 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Heptachlor epoxide | 1024-57-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| alpha-Endosulfan | 959-98-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 4,4'-DDE | 72-55-9 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Dieldrin | 60-57-1 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Endrin | 72-20-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| beta-Endosulfan | 33213-65-9 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 4,4'-DDD | 72-54-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Endosulfan sulfate | 1031-07-8 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| 4,4'-DDT | 50-29-3 | 4 | µg/L | | ---- | <4 | <4 | <4 | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 4 | µg/L | | ---- | <4 | <4 | <4 | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-29-3 | 4 | µg/L | | ---- | <4 | <4 | <4 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW01_25/1/19 | MW05_25/1/19 | QC102_25/1/19 | QC303_25/1/19 | QC404_25/1/19 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1901029-001 | EM1901029-002 | EM1901029-003 | EM1901029-004 | EM1901029-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP075J: Organophosphorus Pesticides | | | | | | | | | |
| Dichlorvos | 62-73-7 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Dimethoate | 60-51-5 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Diazinon | 333-41-5 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Malathion | 121-75-5 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Fenthion | 55-38-9 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Chlorpyrifos | 2921-88-2 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Chlorfenvinphos | 470-90-6 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Prothiofos | 34643-46-4 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| Ethion | 563-12-2 | 2 | µg/L | | ---- | <2 | <2 | <2 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | ---- | <20 | <20 | <20 | <20 |
| C10 - C14 Fraction | ---- | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | | ---- | <100 | <100 | <100 | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | ---- | <50 | <50 | <50 | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | ---- | <20 | <20 | <20 | <20 |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | ---- | <20 | <20 | <20 | <20 |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | ---- | <100 | <100 | <100 | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | ---- | <100 | <100 | <100 | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | ---- | <100 | <100 | <100 | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | ---- | <100 | <100 | <100 | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | ---- | <100 | <100 | <100 | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | ---- | <1 | <1 | <1 | <1 |
| Toluene | 108-88-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | <2 |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | ---- | <2 | <2 | <2 | <2 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | ---- | <2 | <2 | <2 | <2 |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | ---- | <2 | <2 | <2 | <2 |
| ^ Total Xylenes | ---- | 2 | µg/L | | ---- | <2 | <2 | <2 | <2 |
| ^ Sum of BTEX | ---- | 1 | µg/L | | ---- | <1 | <1 | <1 | <1 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW01_25/1/19 | MW05_25/1/19 | QC102_25/1/19 | QC303_25/1/19 | QC404_25/1/19 |
|---|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 | 25-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1901029-001 | EM1901029-002 | EM1901029-003 | EM1901029-004 | EM1901029-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP080: BTEXN - Continued | | | | | | | | | |
| Naphthalene | 91-20-3 | 5 | µg/L | | ---- | <5 | <5 | <5 | <5 |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | ---- | 98.6 | 98.2 | 88.0 | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | ---- | 105 | 104 | 84.5 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | ---- | 104 | 102 | 91.1 | ---- |
| EP075S: Acid Extractable Surrogates | | | | | | | | | |
| 2-Fluorophenol | 367-12-4 | 2 | % | | ---- | 47.1 | 43.2 | 37.1 | ---- |
| Phenol-d6 | 13127-88-3 | 2 | % | | ---- | 29.9 | 24.5 | 29.8 | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 2 | % | | ---- | 61.9 | 55.6 | 51.4 | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 2 | % | | ---- | 82.2 | 75.6 | 62.3 | ---- |
| EP075T: Base/Neutral Extractable Surrogates | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 2 | % | | ---- | 79.3 | 66.1 | 66.9 | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 2 | % | | ---- | 72.3 | 59.6 | 63.0 | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 2 | % | | ---- | 77.5 | 65.7 | 69.9 | ---- |
| Anthracene-d10 | 1719-06-8 | 2 | % | | ---- | 91.7 | 101 | 88.4 | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 2 | % | | ---- | 108 | 95.6 | 109 | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | ---- | 96.4 | 95.6 | 90.8 | 89.6 |
| Toluene-D8 | 2037-26-5 | 2 | % | | ---- | 95.4 | 94.4 | 74.4 | 72.9 |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | ---- | 102 | 100 | 89.9 | 89.0 |



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|---|------------|----------------|------|
| Sub-Matrix: WATER | | □□□□ □□□ □ s □ | |
| Compound | CAS Number | □□% | □□ □ |
| EP074S: VOC Surrogates | | | |
| 1.2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075S: Acid Extractable Surrogates | | | |
| 2-Fluorophenol | 367-12-4 | 10 | 75 |
| Phenol-d6 | 13127-88-3 | 10 | 65 |
| 2-Chlorophenol-D4 | 93951-73-6 | 21 | 103 |
| 2.4.6-Tribromophenol | 118-79-6 | 22 | 120 |
| EP075T: Base/Neutral Extractable Surrogates | | | |
| Nitrobenzene-D5 | 4165-60-0 | 24 | 116 |
| 1.2-Dichlorobenzene-D4 | 2199-69-1 | 23 | 99 |
| 2-Fluorobiphenyl | 321-60-8 | 32 | 114 |
| Anthracene-d10 | 1719-06-8 | 47 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 44 | 124 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1.2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1901029 | Page | : 1 of 17 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 25-Jan-2019 |
| Order number | : 60592634 / Task 1.0 | Date Analysis Commenced | : 25-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 05-Feb-2019 |
| Sampler | : [REDACTED] | | |
| Site | : GIJPP | | |
| Quote number | : EN/004/16 | | |
| No. of samples received | : 5 | | |
| No. of samples analysed | : 5 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Non-metals prep supervisor
Senior Inorganic Chemist
Metals Team Leader
Senior Inorganic Instrument Chemist
Senior Organic Chemist

Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2160362) | | | | | | | | | |
| EM1901035-001 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.48 | 7.53 | 0.666 | 0% - 20% |
| EM1901010-002 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.89 | 7.85 | 0.508 | 0% - 20% |
| EA010P: Conductivity by PC Titrator (QC Lot: 2160363) | | | | | | | | | |
| EM1901040-004 | Anonymous | EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | 3050 | 3050 | 0.00 | 0% - 20% |
| EM1901010-002 | Anonymous | EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | 1770 | 1770 | 0.00 | 0% - 20% |
| ED037P: Alkalinity by PC Titrator (QC Lot: 2160365) | | | | | | | | | |
| EM1901035-001 | Anonymous | ED037-P: Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 525 | 526 | 0.00 | 0% - 20% |
| | | ED037-P: Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 525 | 526 | 0.00 | 0% - 20% |
| EM1901010-002 | Anonymous | ED037-P: Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 268 | 268 | 0.00 | 0% - 20% |
| | | ED037-P: Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 268 | 268 | 0.00 | 0% - 20% |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 2160510) | | | | | | | | | |
| EM1901040-005 | Anonymous | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | 34 | 34 | 0.00 | 0% - 20% |
| EM1901029-001 | MW01_25/1/19 | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | 404 | 399 | 1.35 | 0% - 20% |
| ED045G: Chloride by Discrete Analyser (QC Lot: 2160512) | | | | | | | | | |
| EM1901056-005 | Anonymous | ED045G: Chloride | 16887-00-6 | 1 | mg/L | 1330 | 1330 | 0.231 | 0% - 20% |
| EM1901029-001 | MW01_25/1/19 | ED045G: Chloride | 16887-00-6 | 1 | mg/L | 2960 | 3080 | 3.76 | 0% - 20% |
| ED093F: Dissolved Major Cations (QC Lot: 2160602) | | | | | | | | | |
| EM1900976-017 | Anonymous | ED093F: Calcium | 7440-70-2 | 1 | mg/L | 16 | 16 | 0.00 | 0% - 50% |
| | | ED093F: Magnesium | 7439-95-4 | 1 | mg/L | 6 | 6 | 0.00 | No Limit |
| | | ED093F: Sodium | 7440-23-5 | 1 | mg/L | 266 | 265 | 0.425 | 0% - 20% |

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|-----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| ED093F: Dissolved Major Cations (QC Lot: 2160602) - continued | | | | | | | | | |
| EM1900976-017 | Anonymous | ED093F: Potassium | 7440-09-7 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| EM1901029-004 | QC303_25/1/19 | ED093F: Calcium | 7440-70-2 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED093F: Magnesium | 7439-95-4 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED093F: Sodium | 7440-23-5 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED093F: Potassium | 7440-09-7 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2160603) | | | | | | | | | |
| EM1900976-016 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.007 | 0.008 | 0.00 | No Limit |
| | | EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.002 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.004 | 0.004 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.044 | 0.044 | 0.00 | No Limit |
| | | EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | 0.03 | 0.02 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1901029-004 | QC303_25/1/19 | EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | 0.74 | 0.77 | 4.62 | 0% - 50% |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2160605) | | | | | | | | | |
| EM1900977-043 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050T: Total Hexavalent Chromium (QC Lot: 2159500) | | | | | | | | | |
| EM1901010-001 | Anonymous | EG050T: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2160364) | | | | | | | | | |
| EM1901010-002 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.5 | 0.5 | 0.00 | No Limit |
| EK055G: Ammonia as N by Discrete Analyser (QC Lot: 2161849) | | | | | | | | | |
| EM1901014-002 | Anonymous | EK055G: Ammonia as N | 7664-41-7 | 0.01 | mg/L | 0.08 | 0.07 | 0.00 | No Limit |
| EM1901026-003 | Anonymous | EK055G: Ammonia as N | 7664-41-7 | 0.01 | mg/L | 0.03 | 0.01 | 74.2 | No Limit |
| EK057G: Nitrite as N by Discrete Analyser (QC Lot: 2160509) | | | | | | | | | |
| EM1901024-001 | Anonymous | EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | 0.02 | 0.02 | 0.00 | No Limit |
| EM1901039-002 | Anonymous | EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2161848) | | | | | | | | | |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2161848) - continued | | | | | | | | | |
| EM1901010-001 | Anonymous | EK059G: Nitrite + Nitrate as N | ---- | 0.01 | mg/L | 0.18 | 0.11 | 46.8 | 0% - 50% |
| EM1901026-003 | Anonymous | EK059G: Nitrite + Nitrate as N | ---- | 0.01 | mg/L | 20.5 | 20.0 | 2.82 | 0% - 20% |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 2159104) | | | | | | | | | |
| EM1900986-021 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 0.9 | 0.8 | 17.2 | No Limit |
| EM1901024-002 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 0.9 | 0.8 | 0.00 | No Limit |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 2159106) | | | | | | | | | |
| EM1901029-004 | QC303_25/1/19 | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM1901036-003 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 12.8 | 14.2 | 10.2 | 0% - 20% |
| EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 2159103) | | | | | | | | | |
| EM1900986-021 | Anonymous | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 0.12 | 0.10 | 18.7 | 0% - 50% |
| EM1901024-002 | Anonymous | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 0.12 | 0.12 | 0.00 | 0% - 50% |
| EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 2159105) | | | | | | | | | |
| EM1901029-004 | QC303_25/1/19 | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | <0.01 | 0.03 | 100 | No Limit |
| EM1901036-003 | Anonymous | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 2.08 | 2.08 | 0.00 | 0% - 20% |
| EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 2160511) | | | | | | | | | |
| EM1901029-001 | MW01_25/1/19 | EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2160578) | | | | | | | | | |
| EM1900986-022 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901024-003 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074B: Oxygenated Compounds (QC Lot: 2160578) | | | | | | | | | |
| EM1900986-022 | Anonymous | EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074B: Oxygenated Compounds (QC Lot: 2160578) - continued | | | | | | | | | |
| EM1900986-022 | Anonymous | EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EM1901024-003 | Anonymous | EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074C: Sulfonated Compounds (QC Lot: 2160578) | | | | | | | | | |
| EM1900986-022 | Anonymous | EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901024-003 | Anonymous | EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074D: Fumigants (QC Lot: 2160578) | | | | | | | | | |
| EM1900986-022 | Anonymous | EP074: 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901024-003 | Anonymous | EP074: 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2160578) | | | | | | | | | |
| EM1900986-022 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | | | |
|---|------------------|--|------------|-----------------------------------|----------|-----------------|------------------|---------|---------------------|------|----------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) | | |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2160578) - continued | | | | | | | | | | | |
| EM1900986-022 | Anonymous | EP074: 1,2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| | | EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| | | EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| | | EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| | | EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| EM1901024-003 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | 13 | 14 | 8.22 | No Limit | | |
| | | EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: 1,3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: trans-1,4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: cis-1,4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: 1,2,3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: 1,2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| | | EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| | | EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| | | EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| | | EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| | | EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| | | EP074F: Halogenated Aromatic Compounds (QC Lot: 2160578) | | | | | | | | | |
| | | EM1900986-022 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | | | EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074: 2-Chlorotoluene | 95-49-8 | | | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| EP074: 4-Chlorotoluene | 106-43-4 | | | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| EP074: 1,2,3-Trichlorobenzene | 87-61-6 | | | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|-------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2160578) - continued | | | | | | | | | |
| EM1901024-003 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2160578) | | | | | | | | | |
| EM1900986-022 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901024-003 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2160577) | | | | | | | | | |
| EM1900986-022 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1901024-003 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2164818) | | | | | | | | | |
| EM1901096-028 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1901195-002 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2160577) | | | | | | | | | |
| EM1900986-022 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1901024-003 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | 20 | 20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2164818) | | | | | | | | | |
| EM1901096-028 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1901195-002 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2160577) | | | | | | | | | |
| EM1900986-022 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EM1901024-003 | Anonymous | EP080: Napthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------|----------------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080: BTEXN (QC Lot: 2160577) - continued | | | | | | | | | |
| EM1901024-003 | Anonymous | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2164818) | | | | | | | | | |
| EM1901096-028 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901195-002 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EA010P: Conductivity by PC Titrator (QCLot: 2160363) | | | | | | | | |
| EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | <1 | 1412 µS/cm | 101 | 85 | 119 |
| ED037P: Alkalinity by PC Titrator (QCLot: 2160365) | | | | | | | | |
| ED037-P: Total Alkalinity as CaCO3 | ---- | ---- | mg/L | ---- | 200 mg/L | 98.9 | 88 | 112 |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2160510) | | | | | | | | |
| ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | <1 | 25 mg/L | 99.2 | 86 | 115 |
| | | | | <1 | 100 mg/L | 97.5 | 86 | 115 |
| ED045G: Chloride by Discrete Analyser (QCLot: 2160512) | | | | | | | | |
| ED045G: Chloride | 16887-00-6 | 1 | mg/L | <1 | 10 mg/L | 97.2 | 84 | 122 |
| | | | | <1 | 1000 mg/L | 103 | 84 | 122 |
| ED093F: Dissolved Major Cations (QCLot: 2160602) | | | | | | | | |
| ED093F: Calcium | 7440-70-2 | 1 | mg/L | <1 | 5 mg/L | 97.1 | 92 | 113 |
| ED093F: Magnesium | 7439-95-4 | 1 | mg/L | <1 | 5 mg/L | 99.0 | 87 | 114 |
| ED093F: Sodium | 7440-23-5 | 1 | mg/L | <1 | 50 mg/L | 98.2 | 88 | 113 |
| ED093F: Potassium | 7440-09-7 | 1 | mg/L | <1 | 50 mg/L | 93.4 | 87 | 112 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2160603) | | | | | | | | |
| EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 100 | 93 | 105 |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.3 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 96.0 | 84 | 104 |
| EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 94.2 | 83 | 103 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 91.1 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.9 | 83 | 105 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 94.5 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 92.4 | 82 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 94.4 | 85 | 109 |
| EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | <0.05 | 0.5 mg/L | 103 | 94 | 106 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2160605) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 108 | 76 | 114 |
| EG050T: Total Hexavalent Chromium (QCLot: 2159500) | | | | | | | | |
| EG050T: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 102 | 92 | 111 |
| EK040P: Fluoride by PC Titrator (QCLot: 2160364) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 91.2 | 87 | 117 |
| EK055G: Ammonia as N by Discrete Analyser (QCLot: 2161849) | | | | | | | | |
| EK055G: Ammonia as N | 7664-41-7 | 0.01 | mg/L | <0.01 | 1 mg/L | 99.7 | 87 | 117 |

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|------|-----------------------------|---------------------------------------|---------------------------|--------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
LowHigh | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EK057G: Nitrite as N by Discrete Analyser (QCLot: 2160509) | | | | | | | | |
| EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 105 | 92 | 111 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2161848) | | | | | | | | |
| EK059G: Nitrite + Nitrate as N | ---- | 0.01 | mg/L | <0.01 | 0.5 mg/L | 110 | 93 | 120 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2159104) | | | | | | | | |
| EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | <0.1 | 5 mg/L | 90.9 | 70 | 117 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2159106) | | | | | | | | |
| EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | <0.1 | 5 mg/L | 84.7 | 70 | 117 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2159103) | | | | | | | | |
| EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | <0.01 | 2.21 mg/L | 89.8 | 72 | 114 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2159105) | | | | | | | | |
| EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | <0.01 | 2.21 mg/L | 87.6 | 72 | 114 |
| EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2160511) | | | | | | | | |
| EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 109 | 93 | 113 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2160578) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 87.0 | 79 | 116 |
| EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | 20 µg/L | 84.0 | 72 | 118 |
| EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | 20 µg/L | 81.8 | 66 | 116 |
| EP074: 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | 20 µg/L | 83.8 | 69 | 114 |
| EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | 20 µg/L | 81.4 | 67 | 115 |
| EP074: 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | 20 µg/L | 84.2 | 70 | 113 |
| EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | 20 µg/L | 85.0 | 70 | 115 |
| EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | 20 µg/L | 81.7 | 67 | 116 |
| EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | 20 µg/L | 75.6 | 60 | 116 |
| EP074B: Oxygenated Compounds (QCLot: 2160578) | | | | | | | | |
| EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | 200 µg/L | 90.6 | 68 | 123 |
| EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | 200 µg/L | 94.1 | 68 | 132 |
| EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | 200 µg/L | 92.4 | 75 | 130 |
| EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | 200 µg/L | 95.1 | 74 | 130 |
| EP074C: Sulfonated Compounds (QCLot: 2160578) | | | | | | | | |
| EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | 20 µg/L | 73.4 | 55 | 125 |
| EP074D: Fumigants (QCLot: 2160578) | | | | | | | | |
| EP074: 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | 20 µg/L | 80.0 | 65 | 120 |
| EP074: 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | 20 µg/L | 88.0 | 78 | 116 |
| EP074: cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | 20 µg/L | 87.7 | 76 | 112 |
| EP074: trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | 20 µg/L | 87.7 | 76 | 112 |
| EP074: 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | 20 µg/L | 92.9 | 79 | 117 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2160578) | | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2160578) - continued | | | | | | | | |
| EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | 200 µg/L | 83.4 | 50 | 139 |
| EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | 200 µg/L | 88.2 | 59 | 135 |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 77.5 | 53 | 135 |
| EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | 200 µg/L | 78.0 | 52 | 125 |
| EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | 200 µg/L | 73.5 | 62 | 128 |
| EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | 200 µg/L | 76.4 | 62 | 125 |
| EP074: 1.1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 76.2 | 63 | 124 |
| EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | 20 µg/L | 62.8 | 31 | 126 |
| EP074: trans-1.2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 80.6 | 68 | 119 |
| EP074: 1.1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | 20 µg/L | 84.8 | 74 | 119 |
| EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 86.1 | 77 | 118 |
| EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 79.0 | 68 | 119 |
| EP074: 1.1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | 20 µg/L | 75.9 | 66 | 118 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 73.1 | 62 | 117 |
| EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 91.9 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 80.8 | 67 | 120 |
| EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | 20 µg/L | 90.8 | 80 | 116 |
| EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 93.5 | 84 | 117 |
| EP074: 1.3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | 20 µg/L | 94.4 | 82 | 118 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 81.0 | 67 | 120 |
| EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 87.7 | 76 | 112 |
| EP074: trans-1.4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | 20 µg/L | 97.4 | 71 | 121 |
| EP074: cis-1.4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | 20 µg/L | 87.6 | 68 | 116 |
| EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 94.2 | 81 | 124 |
| EP074: 1.2.3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | 20 µg/L | 95.2 | 80 | 123 |
| EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | 20 µg/L | 81.7 | 70 | 110 |
| EP074: 1.2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | 20 µg/L | 90.2 | 74 | 113 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2160578) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 87.7 | 81 | 116 |
| EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | 20 µg/L | 98.6 | 78 | 114 |
| EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | 20 µg/L | 83.3 | 72 | 115 |
| EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | 20 µg/L | 84.8 | 71 | 114 |
| EP074: 1.2.3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | 20 µg/L | 86.3 | 73 | 120 |
| EP074G: Trihalomethanes (QCLot: 2160578) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 87.0 | 79 | 117 |
| EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | 20 µg/L | 86.7 | 78 | 113 |
| EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | 20 µg/L | 86.6 | 76 | 112 |
| EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | 20 µg/L | 84.3 | 73 | 112 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (QCLot: 2159305) | | | | | | | | |
| EP075: Phenol | 108-95-2 | 2 | µg/L | <2 | 10 µg/L | 43.5 | 20 | 48 |
| EP075: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 83.6 | 49 | 100 |
| EP075: 2-Methylphenol | 95-48-7 | 2 | µg/L | <2 | 10 µg/L | 77.3 | 43 | 95 |
| EP075: 3- & 4-Methylphenol | 1319-77-3 | 2 | µg/L | <2 | 10 µg/L | # 111 | 36 | 92 |
| EP075: 2-Nitrophenol | 88-75-5 | 2 | µg/L | <2 | 10 µg/L | 95.5 | 47 | 111 |
| EP075: 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | <2 | 10 µg/L | 87.8 | 49 | 110 |
| EP075: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 89.1 | 50 | 111 |
| EP075: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 91.6 | 53 | 108 |
| EP075: 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | <2 | 10 µg/L | 87.5 | 51 | 109 |
| EP075: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 85.0 | 48 | 114 |
| EP075: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 80.9 | 48 | 115 |
| EP075: Pentachlorophenol | 87-86-5 | 4 | µg/L | <4 | 10 µg/L | 76.9 | 14 | 124 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2159305) | | | | | | | | |
| EP075: Naphthalene | 91-20-3 | 2 | µg/L | <2 | 10 µg/L | 94.6 | 55 | 108 |
| EP075: 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | <2 | 10 µg/L | 95.0 | 54 | 113 |
| EP075: 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | <2 | 10 µg/L | 94.6 | 54 | 112 |
| EP075: Acenaphthylene | 208-96-8 | 2 | µg/L | <2 | 10 µg/L | 94.6 | 55 | 113 |
| EP075: Acenaphthene | 83-32-9 | 2 | µg/L | <2 | 10 µg/L | 99.1 | 58 | 110 |
| EP075: Fluorene | 86-73-7 | 2 | µg/L | <2 | 10 µg/L | 97.6 | 59 | 113 |
| EP075: Phenanthrene | 85-01-8 | 2 | µg/L | <2 | 10 µg/L | 95.5 | 61 | 112 |
| EP075: Anthracene | 120-12-7 | 2 | µg/L | <2 | 10 µg/L | 96.4 | 61 | 112 |
| EP075: Fluoranthene | 206-44-0 | 2 | µg/L | <2 | 10 µg/L | 96.6 | 61 | 114 |
| EP075: Pyrene | 129-00-0 | 2 | µg/L | <2 | 10 µg/L | 96.0 | 60 | 114 |
| EP075: N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | <2 | 10 µg/L | 91.6 | 55 | 119 |
| EP075: Benz(a)anthracene | 56-55-3 | 2 | µg/L | <2 | 10 µg/L | 94.6 | 60 | 114 |
| EP075: Chrysene | 218-01-9 | 2 | µg/L | <2 | 10 µg/L | 95.7 | 60 | 116 |
| EP075: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 4 | µg/L | <4 | 20 µg/L | 95.6 | 60 | 114 |
| EP075: 7,12-Dimethylbenz(a)anthracene | 57-97-6 | 2 | µg/L | <2 | 10 µg/L | 94.5 | 55 | 140 |
| EP075: Benzo(a)pyrene | 50-32-8 | 2 | µg/L | <2 | 10 µg/L | 93.0 | 58 | 116 |
| EP075: 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | <2 | 10 µg/L | 87.6 | 48 | 119 |
| EP075: Indeno(1,2,3.cd)pyrene | 193-39-5 | 2 | µg/L | <2 | 10 µg/L | 88.9 | 58 | 114 |
| EP075: Dibenzo(a,h)anthracene | 53-70-3 | 2 | µg/L | <2 | 10 µg/L | 88.1 | 57 | 115 |
| EP075: Benzo(g,h,i)perylene | 191-24-2 | 2 | µg/L | <2 | 10 µg/L | 85.5 | 57 | 117 |
| EP075C: Phthalate Esters (QCLot: 2159305) | | | | | | | | |
| EP075: Dimethyl phthalate | 131-11-3 | 2 | µg/L | <2 | 10 µg/L | 94.1 | 56 | 117 |
| EP075: Diethyl phthalate | 84-66-2 | 2 | µg/L | <2 | 10 µg/L | 101 | 61 | 115 |
| EP075: Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | <2 | 10 µg/L | 97.9 | 66 | 117 |
| EP075: Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | <2 | 10 µg/L | 93.8 | 61 | 116 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|---------------------|------|--------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP075C: Phthalate Esters (QCLot: 2159305) - continued | | | | | | | | |
| EP075: bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | <10 | 10 µg/L | 93.8 | 56 | 118 |
| EP075: Di-n-octylphthalate | 117-84-0 | 2 | µg/L | <2 | 10 µg/L | 94.5 | 62 | 115 |
| EP075D: Nitrosamines (QCLot: 2159305) | | | | | | | | |
| EP075: N-Nitrosomethylethylamine | 10595-95-6 | 2 | µg/L | <2 | 10 µg/L | 74.6 | 28 | 94 |
| EP075: N-Nitrosodiethylamine | 55-18-5 | 2 | µg/L | <2 | 10 µg/L | 85.9 | 45 | 110 |
| EP075: N-Nitrosopyrrolidine | 930-55-2 | 4 | µg/L | <4 | 10 µg/L | 67.4 | 37 | 84 |
| EP075: N-Nitrosomorpholine | 59-89-2 | 2 | µg/L | <2 | 10 µg/L | 65.6 | 33 | 81 |
| EP075: N-Nitrosodi-n-propylamine | 621-64-7 | 2 | µg/L | <2 | 10 µg/L | 94.7 | 52 | 115 |
| EP075: N-Nitrosopiperidine | 100-75-4 | 2 | µg/L | <2 | 10 µg/L | 91.0 | 48 | 112 |
| EP075: N-Nitrosodibutylamine | 924-16-3 | 2 | µg/L | <2 | 10 µg/L | 98.0 | 53 | 118 |
| EP075: N-Nitrosodiphenyl & Diphenylamine | 86-30-6
122-39-4 | 4 | µg/L | <4 | 10 µg/L | 97.2 | 59 | 114 |
| EP075: Methapyrilene | 91-80-5 | 2 | µg/L | <2 | 10 µg/L | 88.1 | 10 | 147 |
| EP075E: Nitroaromatics and Ketones (QCLot: 2159305) | | | | | | | | |
| EP075: 2-Picoline | 109-06-8 | 2 | µg/L | <2 | 10 µg/L | 75.4 | 20 | 105 |
| EP075: Acetophenone | 98-86-2 | 2 | µg/L | <2 | 10 µg/L | 95.7 | 55 | 110 |
| EP075: Nitrobenzene | 98-95-3 | 2 | µg/L | <2 | 10 µg/L | 94.9 | 51 | 111 |
| EP075: Isophorone | 78-59-1 | 2 | µg/L | <2 | 10 µg/L | 95.1 | 54 | 113 |
| EP075: 2,6-Dinitrotoluene | 606-20-2 | 4 | µg/L | <4 | 10 µg/L | 93.2 | 55 | 116 |
| EP075: 2,4-Dinitrotoluene | 121-14-2 | 4 | µg/L | <4 | 10 µg/L | 97.3 | 57 | 111 |
| EP075: 1-Naphthylamine | 134-32-7 | 2 | µg/L | <2 | 10 µg/L | # 131 | 11 | 119 |
| EP075: 4-Nitroquinoline-N-oxide | 56-57-5 | 2 | µg/L | <2 | 10 µg/L | 110 | 42 | 148 |
| EP075: 5-Nitro-o-toluidine | 99-55-8 | 2 | µg/L | <2 | 10 µg/L | 98.8 | 51 | 121 |
| EP075: Azobenzene | 103-33-3 | 2 | µg/L | <2 | 10 µg/L | 97.1 | 58 | 114 |
| EP075: 1,3,5-Trinitrobenzene | 99-35-4 | 2 | µg/L | <2 | 10 µg/L | 69.9 | 37 | 123 |
| EP075: Phenacetin | 62-44-2 | 2 | µg/L | <2 | 10 µg/L | 82.3 | 47 | 102 |
| EP075: 4-Aminobiphenyl | 92-67-1 | 2 | µg/L | <2 | 10 µg/L | 72.0 | 24 | 149 |
| EP075: Pentachloronitrobenzene | 82-68-8 | 2 | µg/L | <2 | 10 µg/L | 97.7 | 57 | 114 |
| EP075: Pronamide | 23950-58-5 | 2 | µg/L | <2 | 10 µg/L | 97.1 | 62 | 113 |
| EP075: Dimethylaminoazobenzene | 60-11-7 | 2 | µg/L | <2 | 10 µg/L | 92.4 | 40 | 122 |
| EP075: Chlorobenzilate | 510-15-6 | 2 | µg/L | <2 | 10 µg/L | 96.1 | 58 | 116 |
| EP075F: Haloethers (QCLot: 2159305) | | | | | | | | |
| EP075: Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | <2 | 10 µg/L | 91.0 | 51 | 108 |
| EP075: Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | <2 | 10 µg/L | 94.8 | 53 | 114 |
| EP075: 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | <2 | 10 µg/L | 96.4 | 58 | 113 |
| EP075: 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | <2 | 10 µg/L | 97.3 | 56 | 115 |
| EP075G: Chlorinated Hydrocarbons (QCLot: 2159305) | | | | | | | | |
| EP075: 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | <2 | 10 µg/L | 90.3 | 52 | 103 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075G: Chlorinated Hydrocarbons (QCLot: 2159305) - continued | | | | | | | | |
| EP075: 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | <2 | 10 µg/L | 90.2 | 52 | 104 |
| EP075: 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | <2 | 10 µg/L | 90.4 | 51 | 106 |
| EP075: Hexachloroethane | 67-72-1 | 2 | µg/L | <2 | 10 µg/L | 89.8 | 49 | 106 |
| EP075: 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | <2 | 10 µg/L | 93.5 | 50 | 111 |
| EP075: Hexachloropropylene | 1888-71-7 | 2 | µg/L | <2 | 10 µg/L | 96.0 | 47 | 110 |
| EP075: Hexachlorobutadiene | 87-68-3 | 2 | µg/L | <2 | 10 µg/L | 91.4 | 51 | 110 |
| EP075: Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | <10 | 10 µg/L | 102 | 13 | 129 |
| EP075: Pentachlorobenzene | 608-93-5 | 2 | µg/L | <2 | 10 µg/L | 98.4 | 55 | 112 |
| EP075: Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | <4 | 20 µg/L | 97.6 | 57 | 115 |
| EP075H: Anilines and Benzidines (QCLot: 2159305) | | | | | | | | |
| EP075: Aniline | 62-53-3 | 2 | µg/L | <2 | 10 µg/L | 108 | 14 | 110 |
| EP075: 4-Chloroaniline | 106-47-8 | 2 | µg/L | <2 | 10 µg/L | 89.1 | 15 | 126 |
| EP075: 2-Nitroaniline | 88-74-4 | 4 | µg/L | <4 | 10 µg/L | 86.6 | 53 | 112 |
| EP075: 3-Nitroaniline | 99-09-2 | 4 | µg/L | <4 | 10 µg/L | 109 | 40 | 116 |
| EP075: Dibenzofuran | 132-64-9 | 2 | µg/L | <2 | 10 µg/L | 96.1 | 58 | 112 |
| EP075: 4-Nitroaniline | 100-01-8 | 2 | µg/L | <2 | 10 µg/L | 75.4 | 44 | 114 |
| EP075: Carbazole | 86-74-8 | 2 | µg/L | <2 | 10 µg/L | 95.2 | 61 | 116 |
| EP075: 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | <2 | 10 µg/L | 115 | 42 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2159305) | | | | | | | | |
| EP075: alpha-BHC | 319-84-6 | 2 | µg/L | <2 | 10 µg/L | 97.5 | 56 | 116 |
| EP075: beta-BHC | 319-85-7 | 2 | µg/L | <2 | 10 µg/L | 96.3 | 58 | 115 |
| EP075: gamma-BHC | 58-89-9 | 2 | µg/L | <2 | 10 µg/L | 99.0 | 59 | 115 |
| EP075: delta-BHC | 319-86-8 | 2 | µg/L | <2 | 10 µg/L | 98.6 | 60 | 114 |
| EP075: Heptachlor | 76-44-8 | 2 | µg/L | <2 | 10 µg/L | 96.1 | 56 | 114 |
| EP075: Aldrin | 309-00-2 | 2 | µg/L | <2 | 10 µg/L | 96.7 | 59 | 114 |
| EP075: Heptachlor epoxide | 1024-57-3 | 2 | µg/L | <2 | 10 µg/L | 95.7 | 58 | 116 |
| EP075: alpha-Endosulfan | 959-98-8 | 2 | µg/L | <2 | 10 µg/L | 103 | 59 | 116 |
| EP075: 4,4'-DDE | 72-55-9 | 2 | µg/L | <2 | 10 µg/L | 101 | 61 | 117 |
| EP075: Dieldrin | 60-57-1 | 2 | µg/L | <2 | 10 µg/L | 97.4 | 59 | 116 |
| EP075: Endrin | 72-20-8 | 2 | µg/L | <2 | 10 µg/L | 95.8 | 56 | 117 |
| EP075: beta-Endosulfan | 33213-65-9 | 2 | µg/L | <2 | 10 µg/L | 99.0 | 59 | 115 |
| EP075: 4,4'-DDD | 72-54-8 | 2 | µg/L | <2 | 10 µg/L | 93.4 | 61 | 117 |
| EP075: Endosulfan sulfate | 1031-07-8 | 2 | µg/L | <2 | 10 µg/L | 98.3 | 55 | 120 |
| EP075: 4,4'-DDT | 50-29-3 | 4 | µg/L | <4 | 10 µg/L | 99.2 | 46 | 123 |
| EP075J: Organophosphorus Pesticides (QCLot: 2159305) | | | | | | | | |
| EP075: Dichlorvos | 62-73-7 | 2 | µg/L | <2 | 10 µg/L | 90.5 | 56 | 111 |
| EP075: Dimethoate | 60-51-5 | 2 | µg/L | <2 | 10 µg/L | 80.5 | 44 | 105 |
| EP075: Diazinon | 333-41-5 | 2 | µg/L | <2 | 10 µg/L | 96.0 | 62 | 114 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075J: Organophosphorus Pesticides (QCLot: 2159305) - continued | | | | | | | | |
| EP075: Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | <2 | 10 µg/L | 95.6 | 58 | 115 |
| EP075: Malathion | 121-75-5 | 2 | µg/L | <2 | 10 µg/L | 105 | 59 | 120 |
| EP075: Fenthion | 55-38-9 | 2 | µg/L | <2 | 10 µg/L | 95.6 | 60 | 116 |
| EP075: Chlorpyrifos | 2921-88-2 | 2 | µg/L | <2 | 10 µg/L | 96.2 | 61 | 115 |
| EP075: Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | <2 | 10 µg/L | 96.8 | 61 | 116 |
| EP075: Chlorfenvinphos | 470-90-6 | 2 | µg/L | <2 | 10 µg/L | 93.1 | 54 | 119 |
| EP075: Prothiofos | 34643-46-4 | 2 | µg/L | <2 | 10 µg/L | 96.1 | 60 | 116 |
| EP075: Ethion | 563-12-2 | 2 | µg/L | <2 | 10 µg/L | 96.0 | 59 | 118 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2160577) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 96.5 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2164818) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 106 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2164973) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 92.3 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 108 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 110 | 55 | 130 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2160577) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 94.7 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2164818) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 104 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2164973) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 96.2 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 110 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 115 | 53 | 136 |
| EP080: BTEXN (QCLot: 2160577) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 94.3 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 102 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 101 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | 40 µg/L | 102 | 72 | 129 |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 104 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 105 | 70 | 125 |
| EP080: BTEXN (QCLot: 2164818) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 107 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 104 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 106 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | 40 µg/L | 106 | 72 | 129 |

Matrix Spike (MS) Report

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2160510) | | | | | | | |
| EM1901029-002 | MW05_25/1/19 | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 100 mg/L | 77.0 | 70 | 130 |
| ED045G: Chloride by Discrete Analyser (QCLot: 2160512) | | | | | | | |
| EM1901029-002 | MW05_25/1/19 | ED045G: Chloride | 16887-00-6 | 400 mg/L | # Not Determined | 70 | 130 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2160603) | | | | | | | |
| EM1900976-016 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 96.4 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 93.0 | 81 | 133 |
| | | EG020A-F: Chromium | 7440-47-3 | 0.2 mg/L | 94.7 | 71 | 135 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 88.4 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 88.0 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 92.3 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 91.7 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2160605) | | | | | | | |
| EM1901017-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 114 | 70 | 120 |
| EG050T: Total Hexavalent Chromium (QCLot: 2159500) | | | | | | | |
| EM1901010-002 | Anonymous | EG050T: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 105 | 80 | 120 |
| EK040P: Fluoride by PC Titrator (QCLot: 2160364) | | | | | | | |
| EM1901023-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 92.0 | 70 | 130 |
| EK055G: Ammonia as N by Discrete Analyser (QCLot: 2161849) | | | | | | | |
| EM1901014-003 | Anonymous | EK055G: Ammonia as N | 7664-41-7 | 1 mg/L | 102 | 70 | 130 |
| EK057G: Nitrite as N by Discrete Analyser (QCLot: 2160509) | | | | | | | |
| EM1901024-002 | Anonymous | EK057G: Nitrite as N | 14797-65-0 | 0.5 mg/L | 100 | 80 | 114 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2161848) | | | | | | | |
| EM1901010-002 | Anonymous | EK059G: Nitrite + Nitrate as N | ---- | 0.5 mg/L | 97.7 | 70 | 130 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2159104) | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2159104) - continued | | | | | | | |
| EM1900986-022 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 5 mg/L | 75.5 | 70 | 130 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2159106) | | | | | | | |
| EM1901034-001 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 5 mg/L | 120 | 70 | 130 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2159103) | | | | | | | |
| EM1900986-022 | Anonymous | EK067G: Total Phosphorus as P | ---- | 1 mg/L | 95.1 | 70 | 130 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2159105) | | | | | | | |
| EM1901034-001 | Anonymous | EK067G: Total Phosphorus as P | ---- | 1 mg/L | 94.9 | 70 | 130 |
| EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2160511) | | | | | | | |
| EM1901029-002 | MW05_25/1/19 | EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.5 mg/L | 102 | 79 | 123 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2160578) | | | | | | | |
| EM1900986-023 | Anonymous | EP074: 1.1-Dichloroethene | 75-35-4 | 20 µg/L | 84.6 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 81.3 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2160578) | | | | | | | |
| EM1900986-023 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 89.1 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2160577) | | | | | | | |
| EM1900986-023 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 71.3 | 43 | 125 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2164818) | | | | | | | |
| EM1901096-030 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 83.0 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2160577) | | | | | | | |
| EM1900986-023 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 70.2 | 44 | 122 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2164818) | | | | | | | |
| EM1901096-030 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 80.8 | 44 | 122 |
| EP080: BTEXN (QCLot: 2160577) | | | | | | | |
| EM1900986-023 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 87.6 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 90.2 | 72 | 132 |
| EP080: BTEXN (QCLot: 2164818) | | | | | | | |
| EM1901096-030 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 90.2 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 91.8 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : EM1901029

Page : 1 of 12

Client : AECOM Australia Pty Ltd
Contact :
Project : 60592634
Site : GIJPP
Sampler :
Order number : 60592634 / Task 1.0

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 25-Jan-2019
Issue Date : 05-Feb-2019
No. of samples received : 5
No. of samples analysed : 5

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|---------------------|------------|----------------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075A: Phenolic Compounds | QC-2159305-001 | ---- | 3- & 4-Methylphenol | 1319-77-3 | 111 % | 36-92% | Recovery greater than upper control limit |
| EP075E: Nitroaromatics and Ketones | QC-2159305-001 | ---- | 1-Naphthylamine | 134-32-7 | 131 % | 11-119% | Recovery greater than upper control limit |
| Matrix Spike (MS) Recoveries | | | | | | | |
| ED045G: Chloride by Discrete Analyser | EM1901029--002 | MW05_25/1/19 | Chloride | 16887-00-6 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | | | Extraction / Preparation | | | Analysis | | |
|---|---------------|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural | | | | | | | | |
| MW01_25/1/19, | MW05_25/1/19, | | ---- | ---- | ---- | 30-Jan-2019 | 25-Jan-2019 | 5 |
| QC102_25/1/19, | QC303_25/1/19 | | | | | | | |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Natural | | | | | | | | |
| MW01_25/1/19 | | | ---- | ---- | ---- | 01-Feb-2019 | 26-Jan-2019 | 6 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Natural | | | | | | | | |
| MW01_25/1/19 | | | ---- | ---- | ---- | 31-Jan-2019 | 27-Jan-2019 | 4 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Natural | | | | | | | | |
| MW01_25/1/19 | | | 30-Jan-2019 | 26-Jan-2019 | 4 | ---- | ---- | ---- |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Natural | | | | | | | | |
| MW01_25/1/19 | | | 30-Jan-2019 | 27-Jan-2019 | 3 | ---- | ---- | ---- |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|--------------------------------|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| Fluoride by PC Titrator | 1 | 11 | 9.09 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | 0 | 3 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 3 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |



Matrix: **WATER**

| Quality Control Sample Type
Method | Count | | Rate (%) | | Quality Control Specification |
|---------------------------------------|-------|---------|----------|----------|--------------------------------|
| | QC | Regular | Actual | Expected | |
| Matrix Spikes (MS) - Continued | | | | | |
| Semivolatile Organic Compounds | 0 | 3 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 3 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|--------------------------------|--------------------------|--------------------|------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA005P: pH by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
MW01_25/1/19,
QC102_25/1/19, | MW05_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | ---- | ---- | ---- | 30-Jan-2019 | 25-Jan-2019 | ✗ |
| EA006: Sodium Adsorption Ratio (SAR) | | | | | | | | |
| Clear Plastic Bottle - Natural (ED093F)
MW01_25/1/19 | | 25-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 01-Feb-2019 | ✓ |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 22-Feb-2019 | ✓ |
| EA010P: Conductivity by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (EA010-P)
MW01_25/1/19,
QC102_25/1/19, | MW05_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | ---- | ---- | ---- | 30-Jan-2019 | 22-Feb-2019 | ✓ |
| EA065: Total Hardness as CaCO3 | | | | | | | | |
| Clear Plastic Bottle - Natural (ED093F)
MW01_25/1/19 | | 25-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 01-Feb-2019 | ✓ |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 22-Feb-2019 | ✓ |
| ED037P: Alkalinity by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (ED037-P)
MW01_25/1/19,
QC102_25/1/19, | MW05_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | ---- | ---- | ---- | 30-Jan-2019 | 08-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--------------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | |
| Clear Plastic Bottle - Natural (ED041G)
MW01_25/1/19,
QC102_25/1/19, | MW05_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | ---- | ---- | ---- | 04-Feb-2019 | 22-Feb-2019 | ✓ |
| ED045G: Chloride by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Natural (ED045G)
MW01_25/1/19,
QC102_25/1/19, | MW05_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | ---- | ---- | ---- | 04-Feb-2019 | 22-Feb-2019 | ✓ |
| ED093F: Dissolved Major Cations | | | | | | | | |
| Clear Plastic Bottle - Natural (ED093F)
MW01_25/1/19 | | 25-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 01-Feb-2019 | ✓ |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 22-Feb-2019 | ✓ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | ---- | ---- | ---- | 30-Jan-2019 | 24-Jul-2019 | ✓ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | ---- | ---- | ---- | 31-Jan-2019 | 22-Feb-2019 | ✓ |
| EG050T: Total Hexavalent Chromium | | | | | | | | |
| Clear Plastic Bottle - NaOH (EG050T)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 22-Feb-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
MW01_25/1/19,
QC102_25/1/19, | MW05_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | ---- | ---- | ---- | 30-Jan-2019 | 22-Feb-2019 | ✓ |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Natural (EK055G)
MW01_25/1/19 | | 25-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 26-Jan-2019 | ✗ |
| Clear Plastic Bottle - Sulfuric Acid (EK055G)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 22-Feb-2019 | ✓ |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Natural (EK057G)
MW01_25/1/19,
QC102_25/1/19, | MW05_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | ---- | ---- | ---- | 25-Jan-2019 | 27-Jan-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | |
| Clear Plastic Bottle - Natural (EK059G)
MW01_25/1/19 | 25-Jan-2019 | ---- | ---- | ---- | 31-Jan-2019 | 27-Jan-2019 | ✗ |
| Clear Plastic Bottle - Sulfuric Acid (EK059G)
MW05_25/1/19, QC102_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | ---- | ---- | ---- | 31-Jan-2019 | 22-Feb-2019 | ✓ |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | |
| Clear Plastic Bottle - Natural (EK061G)
MW01_25/1/19 | 25-Jan-2019 | 30-Jan-2019 | 26-Jan-2019 | ✗ | 30-Jan-2019 | 27-Feb-2019 | ✓ |
| Clear Plastic Bottle - Sulfuric Acid (EK061G)
MW05_25/1/19, QC102_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | 30-Jan-2019 | 22-Feb-2019 | ✓ | 30-Jan-2019 | 22-Feb-2019 | ✓ |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | |
| Clear Plastic Bottle - Natural (EK067G)
MW01_25/1/19 | 25-Jan-2019 | 30-Jan-2019 | 27-Jan-2019 | ✗ | 30-Jan-2019 | 27-Feb-2019 | ✓ |
| Clear Plastic Bottle - Sulfuric Acid (EK067G)
MW05_25/1/19, QC102_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | 30-Jan-2019 | 22-Feb-2019 | ✓ | 30-Jan-2019 | 22-Feb-2019 | ✓ |
| EK071G: Reactive Phosphorus as P by discrete analyser | | | | | | | |
| Clear Plastic Bottle - Natural (EK071G)
MW01_25/1/19, MW05_25/1/19,
QC102_25/1/19, QC303_25/1/19 | 25-Jan-2019 | ---- | ---- | ---- | 25-Jan-2019 | 27-Jan-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW05_25/1/19, QC102_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | 30-Jan-2019 | 08-Feb-2019 | ✓ | 31-Jan-2019 | 08-Feb-2019 | ✓ |
| EP074B: Oxygenated Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW05_25/1/19, QC102_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | 30-Jan-2019 | 08-Feb-2019 | ✓ | 31-Jan-2019 | 08-Feb-2019 | ✓ |
| EP074C: Sulfonated Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW05_25/1/19, QC102_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | 30-Jan-2019 | 08-Feb-2019 | ✓ | 31-Jan-2019 | 08-Feb-2019 | ✓ |
| EP074D: Fumigants | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW05_25/1/19, QC102_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | 30-Jan-2019 | 08-Feb-2019 | ✓ | 31-Jan-2019 | 08-Feb-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW05_25/1/19, QC102_25/1/19,
QC303_25/1/19 | 25-Jan-2019 | 30-Jan-2019 | 08-Feb-2019 | ✓ | 31-Jan-2019 | 08-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|----------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 30-Jan-2019 | 08-Feb-2019 | ✓ | 31-Jan-2019 | 08-Feb-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 30-Jan-2019 | 08-Feb-2019 | ✓ | 31-Jan-2019 | 08-Feb-2019 | ✓ |
| EP075A: Phenolic Compounds | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 29-Jan-2019 | 01-Feb-2019 | ✓ | 31-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 29-Jan-2019 | 01-Feb-2019 | ✓ | 31-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075C: Phthalate Esters | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 29-Jan-2019 | 01-Feb-2019 | ✓ | 31-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075D: Nitrosamines | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 29-Jan-2019 | 01-Feb-2019 | ✓ | 31-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075E: Nitroaromatics and Ketones | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 29-Jan-2019 | 01-Feb-2019 | ✓ | 31-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075F: Haloethers | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 29-Jan-2019 | 01-Feb-2019 | ✓ | 31-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075G: Chlorinated Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 29-Jan-2019 | 01-Feb-2019 | ✓ | 31-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075H: Anilines and Benzidines | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 29-Jan-2019 | 01-Feb-2019 | ✓ | 31-Jan-2019 | 10-Mar-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|----------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 29-Jan-2019 | 01-Feb-2019 | ✓ | 31-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075J: Organophosphorus Pesticides | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 29-Jan-2019 | 01-Feb-2019 | ✓ | 31-Jan-2019 | 10-Mar-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 29-Jan-2019 | 01-Feb-2019 | ✓ | 01-Feb-2019 | 10-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 01-Feb-2019 | 08-Feb-2019 | ✓ | 01-Feb-2019 | 08-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC404_25/1/19 | | 25-Jan-2019 | 30-Jan-2019 | 08-Feb-2019 | ✓ | 31-Jan-2019 | 08-Feb-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 29-Jan-2019 | 01-Feb-2019 | ✓ | 01-Feb-2019 | 10-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 01-Feb-2019 | 08-Feb-2019 | ✓ | 01-Feb-2019 | 08-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC404_25/1/19 | | 25-Jan-2019 | 30-Jan-2019 | 08-Feb-2019 | ✓ | 31-Jan-2019 | 08-Feb-2019 | ✓ |
| EP080: BTEXN | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
MW05_25/1/19,
QC303_25/1/19 | QC102_25/1/19, | 25-Jan-2019 | 01-Feb-2019 | 08-Feb-2019 | ✓ | 01-Feb-2019 | 08-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC404_25/1/19 | | 25-Jan-2019 | 30-Jan-2019 | 08-Feb-2019 | ✓ | 31-Jan-2019 | 08-Feb-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Alkalinity by PC Titrator | ED037-P | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Ammonia as N by Discrete analyser | EK055G | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Conductivity by PC Titrator | EA010-P | 2 | 14 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 8 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 13 | 15.38 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 11 | 9.09 | 10.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | EG050T | 1 | 5 | 20.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Major Cations - Dissolved | ED093F | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 1 | 5 | 20.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 0 | 3 | 0.00 | 10.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 4 | 39 | 10.26 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 3 | 0.00 | 10.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 4 | 37 | 10.81 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 2 | 14 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Alkalinity by PC Titrator | ED037-P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Ammonia as N by Discrete analyser | EK055G | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Conductivity by PC Titrator | EA010-P | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | EG050T | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Major Cations - Dissolved | ED093F | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| Total Phosphorus as P By Discrete Analyser | EK067G | 2 | 39 | 5.13 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 37 | 5.41 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Ammonia as N by Discrete analyser | EK055G | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Conductivity by PC Titrator | EA010-P | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | EG050T | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Major Cations - Dissolved | ED093F | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 2 | 39 | 5.13 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 37 | 5.41 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Ammonia as N by Discrete analyser | EK055G | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | EG050T | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 0 | 3 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 2 | 39 | 5.13 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 3 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 37 | 5.41 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Conductivity by PC Titrator | EA010-P | WATER | In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Calculated TDS (from Electrical Conductivity) | EA016 | WATER | In house: Calculation from Electrical Conductivity (APHA 2510 B) using a conversion factor specified in the analytical report. This method is compliant with NEPM (2013) Schedule B(3) |
| Alkalinity by PC Titrator | ED037-P | WATER | In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3) |
| Sulfate (Turbidimetric) as SO ₄ ²⁻ by Discrete Analyser | ED041G | WATER | In house: Referenced to APHA 4500-SO ₄ . Dissolved sulfate is determined in a 0.45µm filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO ₄ suspension is measured by a photometer and the SO ₄ ²⁻ concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Chloride by Discrete Analyser | ED045G | WATER | In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003 |
| Major Cations - Dissolved | ED093F | WATER | In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)

Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)

Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|--|------------|--------|--|
| Hexavalent Chromium - Total | EG050T | WATER | In house: Referenced to APHA 3500 Cr-B. Hexavalent chromium is determined directly on water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Ammonia as N by Discrete analyser | EK055G | WATER | In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Nitrite as N by Discrete Analyser | EK057G | WATER | In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Nitrate as N by Discrete Analyser | EK058G | WATER | In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3) |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | WATER | In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | WATER | In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Nitrogen as N (TKN + Nox) By Discrete Analyser | EK062G | WATER | In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Phosphorus as P By Discrete Analyser | EK067G | WATER | In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | WATER | In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Ionic Balance by PCT DA and Turbi SO4 DA | EN055 - PG | WATER | In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds | EP075 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |



| <i>Analytical Methods</i> | <i>Method</i> | <i>Matrix</i> | <i>Method Descriptions</i> |
|---|---------------|---------------|--|
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| <i>Preparation Methods</i> | <i>Method</i> | <i>Matrix</i> | <i>Method Descriptions</i> |
| TKN/TP Digestion | EK061/EK067 | WATER | In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3) |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

| | | | | | | | |
|---|---------------|---|---------|--|----------------------|---|--|
| CONSULTANT: AECOM Australia | | ADDRESS / OFFICE: Melbourne | | SAMPLER: | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: GUYP | | MOBILE: | | ALS | |
| PROJECT NUMBER & TASK COI 60592634 / 1.0 | | P.O.: | | EMAIL REPORT TO: @aecom.com | | @aecom.com | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | W-6 (TRIM/TEXN/PS) | | W-28 (MNA - nitrate, sulfate, methane, ferrous) | |
| COOLER SEAL (only appropriate): | | Please ignore dates on bottles - all were sampled 30/1/19 - log as per COC please | | W-30 (Disolved metal) | | W-18 (Cd, Cr, Pb, TKN) | |
| Inlet: Yes No N/A | | | | W-14 (Major ions) | | W-13 (TKN, SVDC) | |
| SAMPLE TEMPERATURE | | | | W-14 (Major ions) | | W-13 (TKN, SVDC) | |
| CHILLED: Yes No | | | | W-14 (Major ions) | | W-13 (TKN, SVDC) | |
| SAMPLE INFORMATION (note: S = Soil, W=Water) | | CONTAINER INFORMATION | | W-14 (Major ions) | | W-13 (TKN, SVDC) | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | MW21-30/1/19 | W | 30/1/19 | | 2VS, AG, NP, SH, SP | 7 | |
| 2 | MW22-30/1/19 | 1 | | | 2VS, 2AG, NP, SH, SP | 8 | |
| 3 | QC405-30/1/19 | 6 | | | VS | | |
| 4 | QC305-30/1/19 | | | | 2VS, AG, NP, SH, SP | 7 | |
| <p>Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.</p> <p>Environmental Division Melbourne
Work Order Reference EM1901225</p> <p>Barcode: [Barcode]
Telephone: +61-3-9549 9800</p> | | | | | | | |
| RELINQUISHED BY: | | | | RECEIVED BY: | | | |
| Name: Briana McLarry | | Date: 31/1/19 | | Name: [Signature] | | Date: 31/1/19 | |
| Of: AECOM | | Time: | | Of: [Signature] | | Time: 10:15 | |
| Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VS = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. | | | | Soil Container Codes: Jar = Unpreserved glass jar | | | |

COC Page (of)

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1901225**

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 3 |
| Order number | : 60592634 / 1.0 | Quote number | : EB2017AECOMAU0014 (EN/004/16) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : GIJPP | | |
| Sampler | : [REDACTED] | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 31-Jan-2019 10:15 | Issue Date | : 31-Jan-2019 |
| Client Requested Due Date | : 07-Feb-2019 | Scheduled Reporting Date | : 07-Feb-2019 |

Delivery Details

| | | | |
|----------------------|-----------|------------------------------------|-----------------------|
| Mode of Delivery | : Carrier | Security Seal | : Intact. |
| No. of coolers/boxes | : 1 | Temperature | : 4.7°C - Ice present |
| Receipt Detail | : | No. of samples received / analysed | : 4 / 4 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - EG050T
Total Hexavalent Chromium | WATER - NT-14
Extended Water Suite B | WATER - W-18
TRH(C6 - C9)/BTEXN | WATER - W-23
SVOC/VOC | WATER - W-30
11 Metals |
|----------------------|-----------------------------|------------------|---|---|------------------------------------|--------------------------|---------------------------|
| EM1901225-001 | 30-Jan-2019 00:00 | MW21_30/1/19 | ✓ | ✓ | | ✓ | ✓ |
| EM1901225-002 | 30-Jan-2019 00:00 | MW22_30/1/19 | ✓ | ✓ | | ✓ | ✓ |
| EM1901225-003 | 30-Jan-2019 00:00 | QC405_30/1/19 | | | ✓ | | |
| EM1901225-004 | 30-Jan-2019 00:00 | QC305_30/1/19 | ✓ | ✓ | | ✓ | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

| Method | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|-----------------------------------|--------------------------------|------------------|------------------|-------------|-----------------------|------------|
| Client Sample ID(s) | Container | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | |
| MW21_30/1/19 | Clear Plastic Bottle - Natural | ---- | 30-Jan-2019 | 31-Jan-2019 | ✗ | ---- |
| MW22_30/1/19 | Clear Plastic Bottle - Natural | ---- | 30-Jan-2019 | 31-Jan-2019 | ✗ | ---- |
| QC305_30/1/19 | Clear Plastic Bottle - Natural | ---- | 30-Jan-2019 | 31-Jan-2019 | ✗ | ---- |

ACCOUNTS PAYABLE

- Email AP_CustomerService.ANZ@aecom.com

- Email AP_CustomerService.ANZ@aecom.com

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CERTIFICATE OF ANALYSIS

Work Order : **EM1901225**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number : 60592634 / 1.0
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP
Quote number : EN/004/16
No. of samples received : 4
No. of samples analysed : 4

Page : 1 of 12
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 31-Jan-2019 10:15
Date Analysis Commenced : 31-Jan-2019
Issue Date : 06-Feb-2019 16:48



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|-------------------------------------|---------------------------------------|
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | 2IC Organic Chemist | Melbourne Organics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EA010-P: Electrical Conductivity @ 25°C was analysed by manual method (EA010).
- EP071: EM1901225_001 duplicate QC sample was lost during water extraction.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EP075: 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- EA016: Calculated TDS is determined from Electrical conductivity using a conversion factor of 0.65.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.



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|---|-------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW21_30/1/19 | MW22_30/1/19 | QC405_30/1/19 | QC305_30/1/19 | ---- |
| Client sampling date / time | | | | | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1901225-001 | EM1901225-002 | EM1901225-003 | EM1901225-004 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 7.31 | 7.08 | ---- | 6.35 | ---- |
| EA006: Sodium Adsorption Ratio (SAR) | | | | | | | | | |
| ^ Sodium Adsorption Ratio | ---- | 0.01 | - | | 16.2 | 23.7 | ---- | 0.12 | ---- |
| EA010P: Conductivity by PC Titrator | | | | | | | | | |
| Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | | 8010 | 16600 | ---- | <1 | ---- |
| EA016: Calculated TDS (from Electrical Conductivity) | | | | | | | | | |
| Total Dissolved Solids (Calc.) | ---- | 1 | mg/L | | 5210 | 10800 | ---- | <1 | ---- |
| EA065: Total Hardness as CaCO3 | | | | | | | | | |
| Total Hardness as CaCO3 | ---- | 1 | mg/L | | 1040 | 2240 | ---- | <1 | ---- |
| ED037P: Alkalinity by PC Titrator | | | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | | <1 | <1 | ---- | <1 | ---- |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | | <1 | <1 | ---- | <1 | ---- |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | | 321 | 307 | ---- | 3 | ---- |
| Total Alkalinity as CaCO3 | ---- | 1 | mg/L | | 321 | 307 | ---- | 3 | ---- |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | | |
| Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | | 139 | 333 | ---- | <1 | ---- |
| ED045G: Chloride by Discrete Analyser | | | | | | | | | |
| Chloride | 16887-00-6 | 1 | mg/L | | 2830 | 6120 | ---- | <1 | ---- |
| ED093F: Dissolved Major Cations | | | | | | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | | 83 | 146 | ---- | <1 | ---- |
| Magnesium | 7439-95-4 | 1 | mg/L | | 202 | 456 | ---- | <1 | ---- |
| Sodium | 7440-23-5 | 1 | mg/L | | 1200 | 2580 | ---- | <1 | ---- |
| Potassium | 7440-09-7 | 1 | mg/L | | 4 | 2 | ---- | <1 | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Aluminium | 7429-90-5 | 0.01 | mg/L | | 0.02 | 0.01 | ---- | <0.01 | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | 0.002 | 0.001 | ---- | <0.001 | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | <0.0001 | ---- | <0.0001 | ---- |
| Chromium | 7440-47-3 | 0.001 | mg/L | | <0.001 | <0.001 | ---- | <0.001 | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | 0.006 | 0.001 | ---- | <0.001 | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | 0.003 | 0.004 | ---- | <0.001 | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | <0.001 | ---- | <0.001 | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | <0.01 | ---- | <0.01 | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | 0.164 | 0.021 | ---- | <0.005 | ---- |
| Iron | 7439-89-6 | 0.05 | mg/L | | <0.05 | <0.05 | ---- | <0.05 | ---- |



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|---|------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW21_30/1/19 | MW22_30/1/19 | QC405_30/1/19 | QC305_30/1/19 | ---- |
| Client sampling date / time | | | | | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1901225-001 | EM1901225-002 | EM1901225-003 | EM1901225-004 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | <0.0001 | ---- | <0.0001 | ---- |
| EG050T: Total Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | <0.01 | ---- | <0.01 | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | 0.5 | 0.2 | ---- | <0.1 | ---- |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | | 0.13 | 0.20 | ---- | <0.01 | ---- |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | | 0.01 | 0.01 | ---- | <0.01 | ---- |
| EK058G: Nitrate as N by Discrete Analyser | | | | | | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | | 0.11 | 0.08 | ---- | <0.01 | ---- |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.01 | mg/L | | 0.12 | 0.09 | ---- | <0.01 | ---- |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | | 1.0 | 0.3 | ---- | <0.1 | ---- |
| EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser | | | | | | | | | |
| ^ Total Nitrogen as N | ---- | 0.1 | mg/L | | 1.1 | 0.4 | ---- | <0.1 | ---- |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | | 0.41 | 0.09 | ---- | <0.01 | ---- |
| EK071G: Reactive Phosphorus as P by discrete analyser | | | | | | | | | |
| Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | | 0.02 | <0.01 | ---- | <0.01 | ---- |
| EN055: Ionic Balance | | | | | | | | | |
| Total Anions | ---- | 0.01 | meq/L | | 89.1 | 186 | ---- | 0.06 | ---- |
| Total Cations | ---- | 0.01 | meq/L | | 73.1 | 157 | ---- | <0.01 | ---- |
| Ionic Balance | ---- | 0.01 | % | | 9.91 | 8.35 | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| Isopropylbenzene | 98-82-8 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| n-Propylbenzene | 103-65-1 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| sec-Butylbenzene | 135-98-8 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| tert-Butylbenzene | 98-06-6 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |



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|---|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW21_30/1/19 | MW22_30/1/19 | QC405_30/1/19 | QC305_30/1/19 | ---- |
| Client sampling date / time | | | | | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1901225-001 | EM1901225-002 | EM1901225-003 | EM1901225-004 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons - Continued | | | | | | | | | |
| p-Isopropyltoluene | 99-87-6 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| n-Butylbenzene | 104-51-8 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| EP074B: Oxygenated Compounds | | | | | | | | | |
| Vinyl Acetate | 108-05-4 | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| EP074C: Sulfonated Compounds | | | | | | | | | |
| Carbon disulfide | 75-15-0 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| EP074D: Fumigants | | | | | | | | | |
| 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| Chloromethane | 74-87-3 | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| Bromomethane | 74-83-9 | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| Chloroethane | 75-00-3 | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| Trichlorofluoromethane | 75-69-4 | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| Iodomethane | 74-88-4 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| Dibromomethane | 74-95-3 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | | <5 | <5 | ---- | <5 | ---- |

EP075B: Polynuclear Aromatic Hydrocarbons



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW21_30/1/19 | MW22_30/1/19 | QC405_30/1/19 | QC305_30/1/19 | ---- |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1901225-001 | EM1901225-002 | EM1901225-003 | EM1901225-004 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Naphthalene | 91-20-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Acenaphthylene | 208-96-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Acenaphthene | 83-32-9 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Fluorene | 86-73-7 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Phenanthrene | 85-01-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Anthracene | 120-12-7 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Fluoranthene | 206-44-0 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Pyrene | 129-00-0 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Benzo(a)anthracene | 56-55-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Chrysene | 218-01-9 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 4 | µg/L | | <4 | <4 | ---- | <4 | ---- |
| 7.12-Dimethylbenzo(a)anthracene | 57-97-6 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Benzo(a)pyrene | 50-32-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| ^ Sum of PAHs | ---- | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| EP075C: Phthalate Esters | | | | | | | | | |
| Dimethyl phthalate | 131-11-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Diethyl phthalate | 84-66-2 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | | <10 | <10 | ---- | <10 | ---- |
| Di-n-octylphthalate | 117-84-0 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| EP075D: Nitrosamines | | | | | | | | | |
| N-Nitrosomethylethylamine | 10595-95-6 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| N-Nitrosodiethylamine | 55-18-5 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| N-Nitrosopyrrolidine | 930-55-2 | 4 | µg/L | | <4 | <4 | ---- | <4 | ---- |
| N-Nitrosomorpholine | 59-89-2 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW21_30/1/19 | MW22_30/1/19 | QC405_30/1/19 | QC305_30/1/19 | ---- |
|---|------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Client sampling date / time | | | | | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1901225-001 | EM1901225-002 | EM1901225-003 | EM1901225-004 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075D: Nitrosamines - Continued | | | | | | | | | |
| N-Nitrosodi-n-propylamine | 621-64-7 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| N-Nitrosopiperidine | 100-75-4 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| N-Nitrosodibutylamine | 924-16-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| N-Nitrosodiphenyl & Diphenylamine | 86-30-6 122-39-4 | 4 | µg/L | | <4 | <4 | ---- | <4 | ---- |
| Methapyrilene | 91-80-5 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| EP075E: Nitroaromatics and Ketones | | | | | | | | | |
| 2-Picoline | 109-06-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Acetophenone | 98-86-2 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Nitrobenzene | 98-95-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Isophorone | 78-59-1 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 2,6-Dinitrotoluene | 606-20-2 | 4 | µg/L | | <4 | <4 | ---- | <4 | ---- |
| 2,4-Dinitrotoluene | 121-14-2 | 4 | µg/L | | <4 | <4 | ---- | <4 | ---- |
| 1-Naphthylamine | 134-32-7 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 4-Nitroquinoline-N-oxide | 56-57-5 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 5-Nitro-o-toluidine | 99-55-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Azobenzene | 103-33-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 1,3,5-Trinitrobenzene | 99-35-4 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Phenacetin | 62-44-2 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 4-Aminobiphenyl | 92-67-1 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Pentachloronitrobenzene | 82-68-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Pronamide | 23950-58-5 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Dimethylaminoazobenzene | 60-11-7 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Chlorobenzilate | 510-15-6 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| EP075F: Haloethers | | | | | | | | | |
| Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| EP075G: Chlorinated Hydrocarbons | | | | | | | | | |
| 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Hexachloroethane | 67-72-1 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |



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|---|-------------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW21_30/1/19 | MW22_30/1/19 | QC405_30/1/19 | QC305_30/1/19 | ---- |
| Client sampling date / time | | | | | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1901225-001 | EM1901225-002 | EM1901225-003 | EM1901225-004 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075G: Chlorinated Hydrocarbons - Continued | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Hexachloropropylene | 1888-71-7 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Hexachlorobutadiene | 87-68-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | | <10 | <10 | ---- | <10 | ---- |
| Pentachlorobenzene | 608-93-5 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | | <4 | <4 | ---- | <4 | ---- |
| EP075H: Anilines and Benzidines | | | | | | | | | |
| Aniline | 62-53-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 4-Chloroaniline | 106-47-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 2-Nitroaniline | 88-74-4 | 4 | µg/L | | <4 | <4 | ---- | <4 | ---- |
| 3-Nitroaniline | 99-09-2 | 4 | µg/L | | <4 | <4 | ---- | <4 | ---- |
| Dibenzofuran | 132-64-9 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 4-Nitroaniline | 100-01-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Carbazole | 86-74-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| beta-BHC | 319-85-7 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| gamma-BHC | 58-89-9 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| delta-BHC | 319-86-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Heptachlor | 76-44-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Aldrin | 309-00-2 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Heptachlor epoxide | 1024-57-3 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| alpha-Endosulfan | 959-98-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 4,4'-DDE | 72-55-9 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Dieldrin | 60-57-1 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Endrin | 72-20-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| beta-Endosulfan | 33213-65-9 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 4,4'-DDD | 72-54-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Endosulfan sulfate | 1031-07-8 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| 4,4'-DDT | 50-29-3 | 4 | µg/L | | <4 | <4 | ---- | <4 | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 4 | µg/L | | <4 | <4 | ---- | <4 | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-29-3 | 4 | µg/L | | <4 | <4 | ---- | <4 | ---- |



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|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW21_30/1/19 | MW22_30/1/19 | QC405_30/1/19 | QC305_30/1/19 | ---- |
| Client sampling date / time | | | | | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1901225-001 | EM1901225-002 | EM1901225-003 | EM1901225-004 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP075J: Organophosphorus Pesticides | | | | | | | | | |
| Dichlorvos | 62-73-7 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Dimethoate | 60-51-5 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Diazinon | 333-41-5 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Malathion | 121-75-5 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Fenthion | 55-38-9 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Chlorpyrifos | 2921-88-2 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Chlorfenvinphos | 470-90-6 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Prothiofos | 34643-46-4 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| Ethion | 563-12-2 | 2 | µg/L | | <2 | <2 | ---- | <2 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | <100 | ---- | <100 | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | <50 | ---- | <50 | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | <100 | ---- | <100 | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | <100 | ---- | <100 | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | <100 | ---- | <100 | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | <100 | ---- | <100 | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | <100 | ---- | <100 | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | ---- |



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|---|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW21_30/1/19 | MW22_30/1/19 | QC405_30/1/19 | QC305_30/1/19 | ---- |
| Client sampling date / time | | | | | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | 30-Jan-2019 00:00 | ---- |
| Compound | CAS Number | LOR | Unit | | EM1901225-001 | EM1901225-002 | EM1901225-003 | EM1901225-004 | ----- |
| | | | | | Result | Result | Result | Result | ---- |
| EP080: BTEXN - Continued | | | | | | | | | |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 102 | 100 | ---- | 98.1 | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 90.3 | 93.2 | ---- | 89.3 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 87.0 | 88.4 | ---- | 95.6 | ---- |
| EP075S: Acid Extractable Surrogates | | | | | | | | | |
| 2-Fluorophenol | 367-12-4 | 2 | % | | 20.8 | 26.4 | ---- | 20.5 | ---- |
| Phenol-d6 | 13127-88-3 | 2 | % | | 24.6 | 28.0 | ---- | 26.4 | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 2 | % | | 57.3 | 67.8 | ---- | 64.2 | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 2 | % | | 67.1 | 75.1 | ---- | 66.0 | ---- |
| EP075T: Base/Neutral Extractable Surrogates | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 2 | % | | 60.6 | 72.4 | ---- | 68.2 | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 2 | % | | 53.3 | 64.7 | ---- | 62.0 | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 2 | % | | 65.8 | 70.9 | ---- | 73.4 | ---- |
| Anthracene-d10 | 1719-06-8 | 2 | % | | 73.4 | 80.0 | ---- | 77.8 | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 2 | % | | 72.8 | 78.8 | ---- | 75.9 | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 99.3 | 98.2 | 94.9 | 96.2 | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 82.2 | 84.8 | 81.2 | 81.2 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 93.2 | 94.8 | 92.8 | 94.1 | ---- |



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|---|------------|----------------|------|
| Sub-Matrix: WATER | | □□□□ □□□ □ s □ | |
| Compound | CAS Number | □□% | □□ □ |
| EP074S: VOC Surrogates | | | |
| 1.2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075S: Acid Extractable Surrogates | | | |
| 2-Fluorophenol | 367-12-4 | 10 | 75 |
| Phenol-d6 | 13127-88-3 | 10 | 65 |
| 2-Chlorophenol-D4 | 93951-73-6 | 21 | 103 |
| 2.4.6-Tribromophenol | 118-79-6 | 22 | 120 |
| EP075T: Base/Neutral Extractable Surrogates | | | |
| Nitrobenzene-D5 | 4165-60-0 | 24 | 116 |
| 1.2-Dichlorobenzene-D4 | 2199-69-1 | 23 | 99 |
| 2-Fluorobiphenyl | 321-60-8 | 32 | 114 |
| Anthracene-d10 | 1719-06-8 | 47 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 44 | 124 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1.2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1901225 | Page | : 1 of 19 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 31-Jan-2019 |
| Order number | : 60592634 / 1.0 | Date Analysis Commenced | : 31-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 06-Feb-2019 |
| Sampler | : [REDACTED] | | |
| Site | : GIJPP | | |
| Quote number | : EN/004/16 | | |
| No. of samples received | : 4 | | |
| No. of samples analysed | : 4 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Senior Inorganic Chemist
2IC Organic Chemist
Senior Inorganic Instrument Chemist
Senior Organic Chemist

Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2165066) | | | | | | | | | |
| EM1901078-002 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 6.99 | 7.06 | 0.996 | 0% - 20% |
| EM1901208-003 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.87 | 7.86 | 0.127 | 0% - 20% |
| EA010P: Conductivity by PC Titrator (QC Lot: 2165070) | | | | | | | | | |
| EM1901225-001 | MW21_30/1/19 | EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | 8010 | 8010 | 0.00 | 0% - 20% |
| EM1901240-002 | Anonymous | EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | 5520 | 5520 | 0.00 | 0% - 20% |
| ED037P: Alkalinity by PC Titrator (QC Lot: 2165069) | | | | | | | | | |
| EM1901208-003 | Anonymous | ED037-P: Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 346 | 328 | 5.53 | 0% - 20% |
| | | ED037-P: Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 346 | 328 | 5.53 | 0% - 20% |
| EM1901144-004 | Anonymous | ED037-P: Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | 100 | 102 | 1.22 | 0% - 20% |
| | | ED037-P: Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | 48 | 48 | 0.00 | 0% - 20% |
| | | ED037-P: Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 148 | 150 | 1.30 | 0% - 20% |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 2163544) | | | | | | | | | |
| EM1901208-001 | Anonymous | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | 322 | 319 | 0.827 | 0% - 20% |
| EM1901225-001 | MW21_30/1/19 | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | 139 | 158 | 13.0 | 0% - 20% |
| ED045G: Chloride by Discrete Analyser (QC Lot: 2163545) | | | | | | | | | |
| EM1901208-001 | Anonymous | ED045G: Chloride | 16887-00-6 | 1 | mg/L | 1680 | 1670 | 0.789 | 0% - 20% |
| EM1901225-001 | MW21_30/1/19 | ED045G: Chloride | 16887-00-6 | 1 | mg/L | 2830 | 2770 | 2.16 | 0% - 20% |
| ED093F: Dissolved Major Cations (QC Lot: 2165493) | | | | | | | | | |
| EM1901225-001 | MW21_30/1/19 | ED093F: Calcium | 7440-70-2 | 1 | mg/L | 83 | 84 | 1.44 | 0% - 20% |
| | | ED093F: Magnesium | 7439-95-4 | 1 | mg/L | 202 | 203 | 0.834 | 0% - 20% |
| | | ED093F: Sodium | 7440-23-5 | 1 | mg/L | 1200 | 1100 | 8.40 | 0% - 20% |

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| ED093F: Dissolved Major Cations (QC Lot: 2165493) - continued | | | | | | | | | |
| EM1901225-001 | MW21_30/1/19 | ED093F: Potassium | 7440-09-7 | 1 | mg/L | 4 | 4 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2165492) | | | | | | | | | |
| EM1901221-001 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.005 | 0.005 | 0.00 | No Limit |
| | | EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | 0.002 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.013 | 0.014 | 0.00 | 0% - 50% |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.015 | 0.014 | 9.90 | No Limit |
| | | EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | 0.02 | 0.02 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | 0.17 | 0.17 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2165494) | | | | | | | | | |
| EM1901221-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050T: Total Hexavalent Chromium (QC Lot: 2164127) | | | | | | | | | |
| EM1901225-004 | QC305_30/1/19 | EG050T: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2165067) | | | | | | | | | |
| EM1901144-004 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM1901240-002 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.1 | 0.1 | 0.00 | No Limit |
| EK055G: Ammonia as N by Discrete Analyser (QC Lot: 2166339) | | | | | | | | | |
| EM1901220-001 | Anonymous | EK055G: Ammonia as N | 7664-41-7 | 0.01 | mg/L | <0.01 | 0.07 | 150 | No Limit |
| EM1901238-004 | Anonymous | EK055G: Ammonia as N | 7664-41-7 | 0.01 | mg/L | 0.02 | 0.04 | 72.4 | No Limit |
| EK057G: Nitrite as N by Discrete Analyser (QC Lot: 2163543) | | | | | | | | | |
| EM1901021-001 | Anonymous | EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1901225-001 | MW21_30/1/19 | EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | 0.01 | 0.01 | 0.00 | No Limit |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2166340) | | | | | | | | | |
| EM1901220-001 | Anonymous | EK059G: Nitrite + Nitrate as N | ---- | 0.01 | mg/L | 0.25 | 0.30 | 18.4 | 0% - 20% |
| EM1901238-004 | Anonymous | EK059G: Nitrite + Nitrate as N | ---- | 0.01 | mg/L | 20.0 | 19.9 | 0.505 | 0% - 20% |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 2163710) | | | | | | | | | |
| EM1901225-004 | QC305_30/1/19 | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM1901232-001 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 0.9 | 1.0 | 0.00 | No Limit |
| EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 2163708) | | | | | | | | | |
| EM1901185-001 | Anonymous | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 1.29 | 1.07 | 18.2 | 0% - 20% |
| EM1901190-008 | Anonymous | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 2163711) | | | | | | | | | |
| EM1901225-004 | QC305_30/1/19 | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | <0.01 | 0.01 | 0.00 | No Limit |
| EM1901232-001 | Anonymous | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 0.05 | 0.05 | 0.00 | No Limit |
| EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 2163546) | | | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 2163546) - continued | | | | | | | | | |
| EM1901225-001 | MW21_30/1/19 | EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | 0.02 | 0.02 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.3.5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901225-001 | MW21_30/1/19 | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.3.5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074B: Oxygenated Compounds (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EM1901225-001 | MW21_30/1/19 | EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074C: Sulfonated Compounds (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901225-001 | MW21_30/1/19 | EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074D: Fumigants (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: 2.2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901225-001 | MW21_30/1/19 | EP074: 2.2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074D: Fumigants (QC Lot: 2164819) - continued | | | | | | | | | |
| EM1901225-001 | MW21_30/1/19 | EP074: 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EM1901225-001 | MW21_30/1/19 | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2164819) - continued | | | | | | | | | |
| EM1901225-001 | MW21_30/1/19 | EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit | | |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901225-001 | MW21_30/1/19 | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901225-001 | MW21_30/1/19 | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (QC Lot: 2163851) | | | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|----------------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (QC Lot: 2163851) - continued | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: Phenol | 108-95-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2-Methylphenol | 95-48-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 3- & 4-Methylphenol | 1319-77-3 | 2 | µg/L | <4 | <4 | 0.00 | No Limit |
| | | EP075: 2-Nitrophenol | 88-75-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Pentachlorophenol | 87-86-5 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2163851) | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: Naphthalene | 91-20-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Acenaphthylene | 208-96-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Acenaphthene | 83-32-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Fluorene | 86-73-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Phenanthrene | 85-01-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Anthracene | 120-12-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Fluoranthene | 206-44-0 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Pyrene | 129-00-0 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Benz(a)anthracene | 56-55-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Chrysene | 218-01-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 7,12-Dimethylbenz(a)anthracene | 57-97-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Benzo(a)pyrene | 50-32-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Indeno(1,2,3.cd)pyrene | 193-39-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Dibenz(a,h)anthracene | 53-70-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Benzo(g,h,i)perylene | 191-24-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Benzo(a)pyrene TEQ (zero) | ---- | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075C: Phthalate Esters (QC Lot: 2163851) | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | <10 | <10 | 0.00 | No Limit |
| | | EP075: Dimethyl phthalate | 131-11-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Diethyl phthalate | 84-66-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--|---------------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075C: Phthalate Esters (QC Lot: 2163851) - continued | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Di-n-octylphthalate | 117-84-0 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EP075D: Nitrosamines (QC Lot: 2163851) | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: N-Nitrosomethylethylamine | 10595-95-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-Nitrosodiethylamine | 55-18-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-Nitrosomorpholine | 59-89-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-Nitrosodi-n-propylamine | 621-64-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-Nitrosopiperidine | 100-75-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-Nitrosodibutylamine | 924-16-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Methapyrilene | 91-80-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-Nitrosopyrrolidine | 930-55-2 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| | | EP075: N-Nitrosodiphenyl & Diphenylamine | 86-30-6
122-39-4 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075E: Nitroaromatics and Ketones (QC Lot: 2163851) | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: 2-Picoline | 109-06-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Acetophenone | 98-86-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Nitrobenzene | 98-95-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Isophorone | 78-59-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 1-Naphthylamine | 134-32-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Nitroquinoline-N-oxide | 56-57-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 5-Nitro-o-toluidine | 99-55-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Azobenzene | 103-33-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 1,3,5-Trinitrobenzene | 99-35-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Phenacetin | 62-44-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Aminobiphenyl | 92-67-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Pentachloronitrobenzene | 82-68-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Pronamide | 23950-58-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Dimethylaminoazobenzene | 60-11-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Chlorobenzilate | 510-15-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2,6-Dinitrotoluene | 606-20-2 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| | | EP075: 2,4-Dinitrotoluene | 121-14-2 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075F: Haloethers (QC Lot: 2163851) | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EP075G: Chlorinated Hydrocarbons (QC Lot: 2163851) | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | <10 | <10 | 0.00 | No Limit |
| | | EP075: 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075G: Chlorinated Hydrocarbons (QC Lot: 2163851) - continued | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Hexachloroethane | 67-72-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Hexachloropropylene | 1888-71-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Hexachlorobutadiene | 87-68-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Pentachlorobenzene | 608-93-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075H: Anilines and Benzidines (QC Lot: 2163851) | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: Aniline | 62-53-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Chloroaniline | 106-47-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Dibenzofuran | 132-64-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Nitroaniline | 100-01-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Carbazole | 86-74-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2-Nitroaniline | 88-74-4 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| | | EP075: 3-Nitroaniline | 99-09-2 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2163851) | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: alpha-BHC | 319-84-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: beta-BHC | 319-85-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: gamma-BHC | 58-89-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: delta-BHC | 319-86-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Heptachlor | 76-44-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Aldrin | 309-00-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Heptachlor epoxide | 1024-57-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: alpha-Endosulfan | 959-98-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4,4'-DDE | 72-55-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Dieldrin | 60-57-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Endrin | 72-20-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: beta-Endosulfan | 33213-65-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4,4'-DDD | 72-54-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Endosulfan sulfate | 1031-07-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4,4'-DDT | 50-29-3 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075J: Organophosphorus Pesticides (QC Lot: 2163851) | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: Dichlorvos | 62-73-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Dimethoate | 60-51-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Diazinon | 333-41-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Malathion | 121-75-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Fenthion | 55-38-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075J: Organophosphorus Pesticides (QC Lot: 2163851) - continued | | | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EP075: Chlorpyrifos | 2921-88-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Chlorfenvinphos | 470-90-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Prothiofos | 34643-46-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Ethion | 563-12-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2164820) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1901225-001 | MW21_30/1/19 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2164820) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1901225-001 | MW21_30/1/19 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2164820) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | 106-42-3 | | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901225-001 | MW21_30/1/19 | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | 106-42-3 | | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|-------|-----------------------------|---------------------------------------|--------------------|---------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | LCS | Low |
| EA010P: Conductivity by PC Titrator (QCLot: 2165070) | | | | | | | | |
| EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | <1 | 1412 µS/cm | 100 | 85 | 119 |
| ED037P: Alkalinity by PC Titrator (QCLot: 2165069) | | | | | | | | |
| ED037-P: Total Alkalinity as CaCO3 | ---- | ---- | mg/L | ---- | 200 mg/L | 101 | 88 | 112 |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2163544) | | | | | | | | |
| ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | <1 | 25 mg/L | 98.8 | 86 | 115 |
| | | | | <1 | 100 mg/L | 109 | 86 | 115 |
| ED045G: Chloride by Discrete Analyser (QCLot: 2163545) | | | | | | | | |
| ED045G: Chloride | 16887-00-6 | 1 | mg/L | <1 | 10 mg/L | 93.1 | 84 | 122 |
| | | | | <1 | 1000 mg/L | 106 | 84 | 122 |
| ED093F: Dissolved Major Cations (QCLot: 2165493) | | | | | | | | |
| ED093F: Calcium | 7440-70-2 | 1 | mg/L | <1 | 5 mg/L | 97.3 | 92 | 113 |
| ED093F: Magnesium | 7439-95-4 | 1 | mg/L | <1 | 5 mg/L | 98.6 | 87 | 114 |
| ED093F: Sodium | 7440-23-5 | 1 | mg/L | <1 | 50 mg/L | 101 | 88 | 113 |
| ED093F: Potassium | 7440-09-7 | 1 | mg/L | <1 | 50 mg/L | 95.0 | 87 | 112 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2165492) | | | | | | | | |
| EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 96.9 | 93 | 105 |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 98.9 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 91.4 | 84 | 104 |
| EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.5 | 83 | 103 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.3 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.6 | 83 | 105 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 98.9 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 99.7 | 82 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 100.0 | 85 | 109 |
| EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | <0.05 | 0.5 mg/L | 103 | 94 | 106 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2165494) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 92.6 | 76 | 114 |
| EG050T: Total Hexavalent Chromium (QCLot: 2164127) | | | | | | | | |
| EG050T: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 102 | 92 | 111 |
| EK040P: Fluoride by PC Titrator (QCLot: 2165067) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 104 | 87 | 117 |
| EK055G: Ammonia as N by Discrete Analyser (QCLot: 2166339) | | | | | | | | |
| EK055G: Ammonia as N | 7664-41-7 | 0.01 | mg/L | <0.01 | 1 mg/L | 104 | 87 | 117 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EK057G: Nitrite as N by Discrete Analyser (QCLot: 2163543) | | | | | | | | |
| EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 96.4 | 92 | 111 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2166340) | | | | | | | | |
| EK059G: Nitrite + Nitrate as N | ---- | 0.01 | mg/L | <0.01 | 0.5 mg/L | 96.9 | 93 | 120 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2163710) | | | | | | | | |
| EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | <0.1 | 5 mg/L | 75.5 | 70 | 117 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2163708) | | | | | | | | |
| EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | <0.01 | 2.21 mg/L | 95.6 | 72 | 114 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2163711) | | | | | | | | |
| EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | <0.01 | 2.21 mg/L | 87.2 | 72 | 114 |
| EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2163546) | | | | | | | | |
| EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 102 | 93 | 113 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2164819) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 91.2 | 79 | 116 |
| EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | 20 µg/L | 103 | 72 | 118 |
| EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | 20 µg/L | 92.0 | 66 | 116 |
| EP074: 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | 20 µg/L | 93.2 | 69 | 114 |
| EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | 20 µg/L | 94.6 | 67 | 115 |
| EP074: 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | 20 µg/L | 94.2 | 70 | 113 |
| EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | 20 µg/L | 94.0 | 70 | 115 |
| EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | 20 µg/L | 94.4 | 67 | 116 |
| EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | 20 µg/L | 92.2 | 60 | 116 |
| EP074B: Oxygenated Compounds (QCLot: 2164819) | | | | | | | | |
| EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | 200 µg/L | 91.7 | 68 | 123 |
| EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | 200 µg/L | 100 | 68 | 132 |
| EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | 200 µg/L | 96.6 | 75 | 130 |
| EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | 200 µg/L | 102 | 74 | 130 |
| EP074C: Sulfonated Compounds (QCLot: 2164819) | | | | | | | | |
| EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | 20 µg/L | 86.2 | 55 | 125 |
| EP074D: Fumigants (QCLot: 2164819) | | | | | | | | |
| EP074: 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | 20 µg/L | 92.4 | 65 | 120 |
| EP074: 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | 20 µg/L | 93.5 | 78 | 116 |
| EP074: cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | 20 µg/L | 89.1 | 76 | 112 |
| EP074: trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | 20 µg/L | 89.6 | 76 | 112 |
| EP074: 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | 20 µg/L | 97.8 | 79 | 117 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2164819) | | | | | | | | |
| EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | 200 µg/L | 78.9 | 50 | 139 |
| EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | 200 µg/L | 87.2 | 59 | 135 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2164819) - continued | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 89.4 | 53 | 135 |
| EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | 200 µg/L | 78.4 | 52 | 125 |
| EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | 200 µg/L | 86.3 | 62 | 128 |
| EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | 200 µg/L | 95.1 | 62 | 125 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 91.2 | 63 | 124 |
| EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | 20 µg/L | 66.8 | 31 | 126 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 91.7 | 68 | 119 |
| EP074: 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | 20 µg/L | 93.8 | 74 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 94.9 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 92.5 | 68 | 119 |
| EP074: 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | 20 µg/L | 91.7 | 66 | 118 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 89.8 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 98.1 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 91.7 | 67 | 120 |
| EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | 20 µg/L | 95.3 | 80 | 116 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 101 | 84 | 117 |
| EP074: 1,3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | 20 µg/L | 102 | 82 | 118 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 97.8 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 93.3 | 76 | 112 |
| EP074: trans-1,4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | 20 µg/L | 91.2 | 71 | 121 |
| EP074: cis-1,4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | 20 µg/L | 84.5 | 68 | 116 |
| EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 102 | 81 | 124 |
| EP074: 1,2,3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | 20 µg/L | 104 | 80 | 123 |
| EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | 20 µg/L | 87.8 | 70 | 110 |
| EP074: 1,2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | 20 µg/L | 91.8 | 74 | 113 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2164819) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 95.8 | 81 | 116 |
| EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | 20 µg/L | 94.3 | 78 | 114 |
| EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | 20 µg/L | 92.5 | 72 | 115 |
| EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | 20 µg/L | 92.4 | 71 | 114 |
| EP074: 1,2,3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | 20 µg/L | 98.9 | 73 | 120 |
| EP074G: Trihalomethanes (QCLot: 2164819) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 96.7 | 79 | 117 |
| EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | 20 µg/L | 93.7 | 78 | 113 |
| EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | 20 µg/L | 95.3 | 76 | 112 |
| EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | 20 µg/L | 92.9 | 73 | 112 |
| EP075A: Phenolic Compounds (QCLot: 2163851) | | | | | | | | |
| EP075: Phenol | 108-95-2 | 2 | µg/L | <2 | 10 µg/L | 25.7 | 20 | 48 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|--------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| | | | | | | | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP075A: Phenolic Compounds (QCLot: 2163851) - continued | | | | | | | | |
| EP075: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 56.1 | 49 | 100 |
| EP075: 2-Methylphenol | 95-48-7 | 2 | µg/L | <2 | 10 µg/L | 52.3 | 43 | 95 |
| EP075: 3- & 4-Methylphenol | 1319-77-3 | 2 | µg/L | <2 | 10 µg/L | 49.6 | 36 | 92 |
| EP075: 2-Nitrophenol | 88-75-5 | 2 | µg/L | <2 | 10 µg/L | 50.1 | 47 | 111 |
| EP075: 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | <2 | 10 µg/L | 57.0 | 49 | 110 |
| EP075: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 60.0 | 50 | 111 |
| EP075: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 57.0 | 53 | 108 |
| EP075: 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | <2 | 10 µg/L | 60.5 | 51 | 109 |
| EP075: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 51.9 | 48 | 114 |
| EP075: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 58.2 | 48 | 115 |
| EP075: Pentachlorophenol | 87-86-5 | 4 | µg/L | <4 | 10 µg/L | 22.5 | 14 | 124 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2163851) | | | | | | | | |
| EP075: Naphthalene | 91-20-3 | 2 | µg/L | <2 | 10 µg/L | 60.0 | 55 | 108 |
| EP075: 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | <2 | 10 µg/L | 60.6 | 54 | 113 |
| EP075: 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | <2 | 10 µg/L | 60.4 | 54 | 112 |
| EP075: Acenaphthylene | 208-96-8 | 2 | µg/L | <2 | 10 µg/L | 60.6 | 55 | 113 |
| EP075: Acenaphthene | 83-32-9 | 2 | µg/L | <2 | 10 µg/L | 61.5 | 58 | 110 |
| EP075: Fluorene | 86-73-7 | 2 | µg/L | <2 | 10 µg/L | 61.9 | 59 | 113 |
| EP075: Phenanthrene | 85-01-8 | 2 | µg/L | <2 | 10 µg/L | 65.7 | 61 | 112 |
| EP075: Anthracene | 120-12-7 | 2 | µg/L | <2 | 10 µg/L | 64.6 | 61 | 112 |
| EP075: Fluoranthene | 206-44-0 | 2 | µg/L | <2 | 10 µg/L | 64.8 | 61 | 114 |
| EP075: Pyrene | 129-00-0 | 2 | µg/L | <2 | 10 µg/L | 66.2 | 60 | 114 |
| EP075: N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | <2 | 10 µg/L | 62.9 | 55 | 119 |
| EP075: Benz(a)anthracene | 56-55-3 | 2 | µg/L | <2 | 10 µg/L | 64.6 | 60 | 114 |
| EP075: Chrysene | 218-01-9 | 2 | µg/L | <2 | 10 µg/L | 65.4 | 60 | 116 |
| EP075: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 4 | µg/L | <4 | 20 µg/L | 68.8 | 60 | 114 |
| EP075: 7,12-Dimethylbenz(a)anthracene | 57-97-6 | 2 | µg/L | <2 | 10 µg/L | 68.1 | 55 | 140 |
| EP075: Benzo(a)pyrene | 50-32-8 | 2 | µg/L | <2 | 10 µg/L | 67.4 | 58 | 116 |
| EP075: 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | <2 | 10 µg/L | 55.4 | 48 | 119 |
| EP075: Indeno(1,2,3-cd)pyrene | 193-39-5 | 2 | µg/L | <2 | 10 µg/L | 68.3 | 58 | 114 |
| EP075: Dibenzo(a,h)anthracene | 53-70-3 | 2 | µg/L | <2 | 10 µg/L | 67.6 | 57 | 115 |
| EP075: Benzo(g,h,i)perylene | 191-24-2 | 2 | µg/L | <2 | 10 µg/L | 66.6 | 57 | 117 |
| EP075C: Phthalate Esters (QCLot: 2163851) | | | | | | | | |
| EP075: Dimethyl phthalate | 131-11-3 | 2 | µg/L | <2 | 10 µg/L | 61.1 | 56 | 117 |
| EP075: Diethyl phthalate | 84-66-2 | 2 | µg/L | <2 | 10 µg/L | 63.0 | 61 | 115 |
| EP075: Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | <2 | 10 µg/L | 74.7 | 66 | 117 |
| EP075: Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | <2 | 10 µg/L | 66.1 | 61 | 116 |
| EP075: bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | <10 | 10 µg/L | 72.2 | 56 | 118 |



Sub-Matrix: **WATER**

| Method Blank (MB) Report | | | | Laboratory Control Spike (LCS) Report | | | | |
|--|---------------------|-----|------|---------------------------------------|--------------------|------|---------------------|-----|
| | | | | Spike Concentration | Spike Recovery (%) | | Recovery Limits (%) | |
| | | | | | LCS | Low | High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075C: Phthalate Esters (QCLot: 2163851) - continued | | | | | | | | |
| EP075: Di-n-octylphthalate | 117-84-0 | 2 | µg/L | <2 | 10 µg/L | 69.7 | 62 | 115 |
| EP075D: Nitrosamines (QCLot: 2163851) | | | | | | | | |
| EP075: N-Nitrosomethylethylamine | 10595-95-6 | 2 | µg/L | <2 | 10 µg/L | 53.3 | 28 | 94 |
| EP075: N-Nitrosodiethylamine | 55-18-5 | 2 | µg/L | <2 | 10 µg/L | 63.5 | 45 | 110 |
| EP075: N-Nitrosopyrrolidine | 930-55-2 | 4 | µg/L | <4 | 10 µg/L | 48.4 | 37 | 84 |
| EP075: N-Nitrosomorpholine | 59-89-2 | 2 | µg/L | <2 | 10 µg/L | 47.3 | 33 | 81 |
| EP075: N-Nitrosodi-n-propylamine | 621-64-7 | 2 | µg/L | <2 | 10 µg/L | 65.5 | 52 | 115 |
| EP075: N-Nitrosopiperidine | 100-75-4 | 2 | µg/L | <2 | 10 µg/L | 63.3 | 48 | 112 |
| EP075: N-Nitrosodibutylamine | 924-16-3 | 2 | µg/L | <2 | 10 µg/L | 65.0 | 53 | 118 |
| EP075: N-Nitrosodiphenyl & Diphenylamine | 86-30-6
122-39-4 | 4 | µg/L | <4 | 10 µg/L | 60.9 | 59 | 114 |
| EP075: Methapyrilene | 91-80-5 | 2 | µg/L | <2 | 10 µg/L | 33.4 | 10 | 147 |
| EP075E: Nitroaromatics and Ketones (QCLot: 2163851) | | | | | | | | |
| EP075: 2-Picoline | 109-06-8 | 2 | µg/L | <2 | 10 µg/L | 41.4 | 20 | 105 |
| EP075: Acetophenone | 98-86-2 | 2 | µg/L | <2 | 10 µg/L | 60.0 | 55 | 110 |
| EP075: Nitrobenzene | 98-95-3 | 2 | µg/L | <2 | 10 µg/L | 58.3 | 51 | 111 |
| EP075: Isophorone | 78-59-1 | 2 | µg/L | <2 | 10 µg/L | 58.6 | 54 | 113 |
| EP075: 2,6-Dinitrotoluene | 606-20-2 | 4 | µg/L | <4 | 10 µg/L | 59.7 | 55 | 116 |
| EP075: 2,4-Dinitrotoluene | 121-14-2 | 4 | µg/L | <4 | 10 µg/L | 58.3 | 57 | 111 |
| EP075: 1-Naphthylamine | 134-32-7 | 2 | µg/L | <2 | 10 µg/L | 42.5 | 11 | 119 |
| EP075: 4-Nitroquinoline-N-oxide | 56-57-5 | 2 | µg/L | <2 | 10 µg/L | 75.0 | 42 | 148 |
| EP075: 5-Nitro-o-toluidine | 99-55-8 | 2 | µg/L | <2 | 10 µg/L | 88.8 | 51 | 121 |
| EP075: Azobenzene | 103-33-3 | 2 | µg/L | <2 | 10 µg/L | 64.0 | 58 | 114 |
| EP075: 1,3,5-Trinitrobenzene | 99-35-4 | 2 | µg/L | <2 | 10 µg/L | 49.4 | 37 | 123 |
| EP075: Phenacetin | 62-44-2 | 2 | µg/L | <2 | 10 µg/L | 59.0 | 47 | 102 |
| EP075: 4-Aminobiphenyl | 92-67-1 | 2 | µg/L | <2 | 10 µg/L | 70.9 | 24 | 149 |
| EP075: Pentachloronitrobenzene | 82-68-8 | 2 | µg/L | <2 | 10 µg/L | 59.4 | 57 | 114 |
| EP075: Pronamide | 23950-58-5 | 2 | µg/L | <2 | 10 µg/L | 65.4 | 62 | 113 |
| EP075: Dimethylaminoazobenzene | 60-11-7 | 2 | µg/L | <2 | 10 µg/L | 59.6 | 40 | 122 |
| EP075: Chlorobenzilate | 510-15-6 | 2 | µg/L | <2 | 10 µg/L | 66.0 | 58 | 116 |
| EP075F: Haloethers (QCLot: 2163851) | | | | | | | | |
| EP075: Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | <2 | 10 µg/L | 61.8 | 51 | 108 |
| EP075: Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | <2 | 10 µg/L | 61.3 | 53 | 114 |
| EP075: 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | <2 | 10 µg/L | 59.6 | 58 | 113 |
| EP075: 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | <2 | 10 µg/L | 61.8 | 56 | 115 |
| EP075G: Chlorinated Hydrocarbons (QCLot: 2163851) | | | | | | | | |
| EP075: 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | <2 | 10 µg/L | 56.4 | 52 | 103 |
| EP075: 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | <2 | 10 µg/L | 56.0 | 52 | 104 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075G: Chlorinated Hydrocarbons (QCLot: 2163851) - continued | | | | | | | | |
| EP075: 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | <2 | 10 µg/L | 57.1 | 51 | 106 |
| EP075: Hexachloroethane | 67-72-1 | 2 | µg/L | <2 | 10 µg/L | 53.6 | 49 | 106 |
| EP075: 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | <2 | 10 µg/L | 57.2 | 50 | 111 |
| EP075: Hexachloropropylene | 1888-71-7 | 2 | µg/L | <2 | 10 µg/L | 52.0 | 47 | 110 |
| EP075: Hexachlorobutadiene | 87-68-3 | 2 | µg/L | <2 | 10 µg/L | 58.5 | 51 | 110 |
| EP075: Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | <10 | 10 µg/L | 58.4 | 13 | 129 |
| EP075: Pentachlorobenzene | 608-93-5 | 2 | µg/L | <2 | 10 µg/L | 61.7 | 55 | 112 |
| EP075: Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | <4 | 20 µg/L | 61.7 | 57 | 115 |
| EP075H: Anilines and Benzidines (QCLot: 2163851) | | | | | | | | |
| EP075: Aniline | 62-53-3 | 2 | µg/L | <2 | 10 µg/L | 69.0 | 14 | 110 |
| EP075: 4-Chloroaniline | 106-47-8 | 2 | µg/L | <2 | 10 µg/L | 115 | 15 | 126 |
| EP075: 2-Nitroaniline | 88-74-4 | 4 | µg/L | <4 | 10 µg/L | 60.5 | 53 | 112 |
| EP075: 3-Nitroaniline | 99-09-2 | 4 | µg/L | <4 | 10 µg/L | 80.9 | 40 | 116 |
| EP075: Dibenzofuran | 132-64-9 | 2 | µg/L | <2 | 10 µg/L | 60.2 | 58 | 112 |
| EP075: 4-Nitroaniline | 100-01-8 | 2 | µg/L | <2 | 10 µg/L | 67.6 | 44 | 114 |
| EP075: Carbazole | 86-74-8 | 2 | µg/L | <2 | 10 µg/L | 70.2 | 61 | 116 |
| EP075: 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | <2 | 10 µg/L | 77.6 | 42 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2163851) | | | | | | | | |
| EP075: alpha-BHC | 319-84-6 | 2 | µg/L | <2 | 10 µg/L | 61.3 | 56 | 116 |
| EP075: beta-BHC | 319-85-7 | 2 | µg/L | <2 | 10 µg/L | 61.4 | 58 | 115 |
| EP075: gamma-BHC | 58-89-9 | 2 | µg/L | <2 | 10 µg/L | 60.0 | 59 | 115 |
| EP075: delta-BHC | 319-86-8 | 2 | µg/L | <2 | 10 µg/L | 64.8 | 60 | 114 |
| EP075: Heptachlor | 76-44-8 | 2 | µg/L | <2 | 10 µg/L | 60.5 | 56 | 114 |
| EP075: Aldrin | 309-00-2 | 2 | µg/L | <2 | 10 µg/L | 62.4 | 59 | 114 |
| EP075: Heptachlor epoxide | 1024-57-3 | 2 | µg/L | <2 | 10 µg/L | 63.7 | 58 | 116 |
| EP075: alpha-Endosulfan | 959-98-8 | 2 | µg/L | <2 | 10 µg/L | 64.6 | 59 | 116 |
| EP075: 4,4'-DDE | 72-55-9 | 2 | µg/L | <2 | 10 µg/L | 65.4 | 61 | 117 |
| EP075: Dieldrin | 60-57-1 | 2 | µg/L | <2 | 10 µg/L | 62.0 | 59 | 116 |
| EP075: Endrin | 72-20-8 | 2 | µg/L | <2 | 10 µg/L | 66.7 | 56 | 117 |
| EP075: beta-Endosulfan | 33213-65-9 | 2 | µg/L | <2 | 10 µg/L | 68.1 | 59 | 115 |
| EP075: 4,4'-DDD | 72-54-8 | 2 | µg/L | <2 | 10 µg/L | 70.0 | 61 | 117 |
| EP075: Endosulfan sulfate | 1031-07-8 | 2 | µg/L | <2 | 10 µg/L | 66.9 | 55 | 120 |
| EP075: 4,4'-DDT | 50-29-3 | 4 | µg/L | <4 | 10 µg/L | 48.8 | 46 | 123 |
| EP075J: Organophosphorus Pesticides (QCLot: 2163851) | | | | | | | | |
| EP075: Dichlorvos | 62-73-7 | 2 | µg/L | <2 | 10 µg/L | 63.2 | 56 | 111 |
| EP075: Dimethoate | 60-51-5 | 2 | µg/L | <2 | 10 µg/L | 60.0 | 44 | 105 |
| EP075: Diazinon | 333-41-5 | 2 | µg/L | <2 | 10 µg/L | 63.3 | 62 | 114 |
| EP075: Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | <2 | 10 µg/L | 63.4 | 58 | 115 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP075J: Organophosphorus Pesticides (QCLot: 2163851) - continued | | | | | | | | |
| EP075: Malathion | 121-75-5 | 2 | µg/L | <2 | 10 µg/L | 71.3 | 59 | 120 |
| EP075: Fenthion | 55-38-9 | 2 | µg/L | <2 | 10 µg/L | 62.9 | 60 | 116 |
| EP075: Chlorpyrifos | 2921-88-2 | 2 | µg/L | <2 | 10 µg/L | 67.2 | 61 | 115 |
| EP075: Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | <2 | 10 µg/L | 64.7 | 61 | 116 |
| EP075: Chlorfenvinphos | 470-90-6 | 2 | µg/L | <2 | 10 µg/L | 72.3 | 54 | 119 |
| EP075: Prothiofos | 34643-46-4 | 2 | µg/L | <2 | 10 µg/L | 66.0 | 60 | 116 |
| EP075: Ethion | 563-12-2 | 2 | µg/L | <2 | 10 µg/L | 70.6 | 59 | 118 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2164820) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 99.5 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2165140) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 97.5 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 105 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 105 | 55 | 130 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2164820) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 97.3 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2165140) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 107 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 104 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 96.1 | 53 | 136 |
| EP080: BTEXN (QCLot: 2164820) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 90.0 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 99.8 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 95.0 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | 40 µg/L | 99.6 | 72 | 129 |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 101 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 84.3 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

| Laboratory sample ID | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--|------------|--------------------------|-------------------|---------------------|------|
| | | | | Spike
Concentration | Spike Recovery(%) | Recovery Limits (%) | |
| | | | | | MS | Low | High |
| Client sample ID | Method: Compound | CAS Number | | | | | |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2163544) | | | | | | | |
| EM1901208-002 | Anonymous | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 100 mg/L | 76.7 | 70 | 130 |

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| ED045G: Chloride by Discrete Analyser (QCLot: 2163545) | | | | | | | |
| EM1901208-002 | Anonymous | ED045G: Chloride | 16887-00-6 | 400 mg/L | 72.2 | 70 | 130 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2165492) | | | | | | | |
| EM1901221-001 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 107 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 95.2 | 81 | 133 |
| | | EG020A-F: Chromium | 7440-47-3 | 0.2 mg/L | 96.2 | 71 | 135 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 98.0 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 89.1 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 102 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 98.2 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2165494) | | | | | | | |
| EM1901225-001 | MW21_30/1/19 | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 87.4 | 70 | 120 |
| EG050T: Total Hexavalent Chromium (QCLot: 2164127) | | | | | | | |
| EM1901241-001 | Anonymous | EG050T: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 107 | 80 | 120 |
| EK040P: Fluoride by PC Titrator (QCLot: 2165067) | | | | | | | |
| EM1901144-003 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 99.8 | 70 | 130 |
| EK055G: Ammonia as N by Discrete Analyser (QCLot: 2166339) | | | | | | | |
| EM1901221-001 | Anonymous | EK055G: Ammonia as N | 7664-41-7 | 1 mg/L | # Not Determined | 70 | 130 |
| EK057G: Nitrite as N by Discrete Analyser (QCLot: 2163543) | | | | | | | |
| EM1901208-001 | Anonymous | EK057G: Nitrite as N | 14797-65-0 | 0.5 mg/L | 95.9 | 80 | 114 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2166340) | | | | | | | |
| EM1901221-001 | Anonymous | EK059G: Nitrite + Nitrate as N | ---- | 0.5 mg/L | 86.1 | 70 | 130 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2163710) | | | | | | | |
| EM1901227-001 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 5 mg/L | 83.7 | 70 | 130 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2163708) | | | | | | | |
| EM1901185-002 | Anonymous | EK067G: Total Phosphorus as P | ---- | 1 mg/L | 87.5 | 70 | 130 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2163711) | | | | | | | |
| EM1901227-001 | Anonymous | EK067G: Total Phosphorus as P | ---- | 1 mg/L | 80.9 | 70 | 130 |
| EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2163546) | | | | | | | |
| EM1901225-002 | MW22_30/1/19 | EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.5 mg/L | 94.3 | 79 | 123 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2164819) | | | | | | | |
| EM1901196-001 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 81.2 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 70.4 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2164819) | | | | | | | |

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 Work Order : EM1901225
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2164819) - continued | | | | | | | |
| EM1901196-001 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 85.5 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2164820) | | | | | | | |
| EM1901196-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 63.6 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2164820) | | | | | | | |
| EM1901196-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 61.7 | 44 | 122 |
| EP080: BTEXN (QCLot: 2164820) | | | | | | | |
| EM1901196-001 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 78.3 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 80.1 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|---------------------------|-------------------------|------------------------------------|
| Work Order | : EM1901225 | Page | : 1 of 11 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 31-Jan-2019 |
| Site | : GIJPP | Issue Date | : 06-Feb-2019 |
| Sampler | : [REDACTED] | No. of samples received | : 4 |
| Order number | : 60592634 / 1.0 | No. of samples analysed | : 4 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|---|----------------------|------------------|--------------|------------|----------------|--------|---|
| Matrix Spike (MS) Recoveries | | | | | | | |
| EK055G: Ammonia as N by Discrete Analyser | EM1901221--001 | Anonymous | Ammonia as N | 7664-41-7 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | | Extraction / Preparation | | | Analysis | | |
|---------------------------------------|---------------|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural | | | | | | | |
| MW21_30/1/19, | MW22_30/1/19, | ---- | ---- | ---- | 01-Feb-2019 | 30-Jan-2019 | 2 |
| QC305_30/1/19 | | | | | | | |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|--------------------------------|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| TRH - Semivolatile Fraction | 0 | 3 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| Semivolatile Organic Compounds | 0 | 3 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 3 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|---------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P) | | | | | | | | |
| MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 30-Jan-2019 | ✖ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA006: Sodium Adsorption Ratio (SAR) | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 27-Feb-2019 | ✓ |
| EA010P: Conductivity by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (EA010-P)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 27-Feb-2019 | ✓ |
| EA065: Total Hardness as CaCO3 | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 27-Feb-2019 | ✓ |
| ED037P: Alkalinity by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (ED037-P)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 13-Feb-2019 | ✓ |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | |
| Clear Plastic Bottle - Natural (ED041G)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 05-Feb-2019 | 27-Feb-2019 | ✓ |
| ED045G: Chloride by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Natural (ED045G)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 05-Feb-2019 | 27-Feb-2019 | ✓ |
| ED093F: Dissolved Major Cations | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 27-Feb-2019 | ✓ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 29-Jul-2019 | ✓ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
MW21_30/1/19 | | 30-Jan-2019 | ---- | ---- | ---- | 05-Feb-2019 | 27-Feb-2019 | ✓ |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
MW22_30/1/19, | QC305_30/1/19 | 30-Jan-2019 | ---- | ---- | ---- | 06-Feb-2019 | 27-Feb-2019 | ✓ |
| EG050T: Total Hexavalent Chromium | | | | | | | | |
| Clear Plastic Bottle - NaOH (EG050T)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 31-Jan-2019 | 27-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK040P: Fluoride by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 27-Feb-2019 | ✓ |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Sulfuric Acid (EK055G)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 04-Feb-2019 | 27-Feb-2019 | ✓ |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Natural (EK057G)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 01-Feb-2019 | ✓ |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Sulfuric Acid (EK059G)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 04-Feb-2019 | 27-Feb-2019 | ✓ |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Sulfuric Acid (EK061G)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 27-Feb-2019 | ✓ | 01-Feb-2019 | 27-Feb-2019 | ✓ |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Sulfuric Acid (EK067G)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 27-Feb-2019 | ✓ | 01-Feb-2019 | 27-Feb-2019 | ✓ |
| EK071G: Reactive Phosphorus as P by discrete analyser | | | | | | | | |
| Clear Plastic Bottle - Natural (EK071G)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 01-Feb-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 13-Feb-2019 | ✓ | 01-Feb-2019 | 13-Feb-2019 | ✓ |
| EP074B: Oxygenated Compounds | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 13-Feb-2019 | ✓ | 01-Feb-2019 | 13-Feb-2019 | ✓ |
| EP074C: Sulfonated Compounds | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 13-Feb-2019 | ✓ | 01-Feb-2019 | 13-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|---------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP074D: Fumigants | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 13-Feb-2019 | ✓ | 01-Feb-2019 | 13-Feb-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 13-Feb-2019 | ✓ | 01-Feb-2019 | 13-Feb-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 13-Feb-2019 | ✓ | 01-Feb-2019 | 13-Feb-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 13-Feb-2019 | ✓ | 01-Feb-2019 | 13-Feb-2019 | ✓ |
| EP075A: Phenolic Compounds | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 06-Feb-2019 | ✓ | 04-Feb-2019 | 13-Mar-2019 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 06-Feb-2019 | ✓ | 04-Feb-2019 | 13-Mar-2019 | ✓ |
| EP075C: Phthalate Esters | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 06-Feb-2019 | ✓ | 04-Feb-2019 | 13-Mar-2019 | ✓ |
| EP075D: Nitrosamines | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 06-Feb-2019 | ✓ | 04-Feb-2019 | 13-Mar-2019 | ✓ |
| EP075E: Nitroaromatics and Ketones | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 06-Feb-2019 | ✓ | 04-Feb-2019 | 13-Mar-2019 | ✓ |
| EP075F: Haloethers | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 06-Feb-2019 | ✓ | 04-Feb-2019 | 13-Mar-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--------------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075G: Chlorinated Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 06-Feb-2019 | ✓ | 04-Feb-2019 | 13-Mar-2019 | ✓ |
| EP075H: Anilines and Benzidines | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 06-Feb-2019 | ✓ | 04-Feb-2019 | 13-Mar-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 06-Feb-2019 | ✓ | 04-Feb-2019 | 13-Mar-2019 | ✓ |
| EP075J: Organophosphorus Pesticides | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 06-Feb-2019 | ✓ | 04-Feb-2019 | 13-Mar-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 06-Feb-2019 | ✓ | 04-Feb-2019 | 13-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
MW21_30/1/19,
QC405_30/1/19, | MW22_30/1/19,
QC305_30/1/19 | 30-Jan-2019 | 01-Feb-2019 | 13-Feb-2019 | ✓ | 01-Feb-2019 | 13-Feb-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
MW21_30/1/19,
QC305_30/1/19 | MW22_30/1/19, | 30-Jan-2019 | 01-Feb-2019 | 06-Feb-2019 | ✓ | 04-Feb-2019 | 13-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
MW21_30/1/19,
QC405_30/1/19, | MW22_30/1/19,
QC305_30/1/19 | 30-Jan-2019 | 01-Feb-2019 | 13-Feb-2019 | ✓ | 01-Feb-2019 | 13-Feb-2019 | ✓ |
| EP080: BTEXN | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
MW21_30/1/19,
QC405_30/1/19, | MW22_30/1/19,
QC305_30/1/19 | 30-Jan-2019 | 01-Feb-2019 | 13-Feb-2019 | ✓ | 01-Feb-2019 | 13-Feb-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Alkalinity by PC Titrator | ED037-P | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Ammonia as N by Discrete analyser | EK055G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Conductivity by PC Titrator | EA010-P | 2 | 17 | 11.76 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 5 | 20.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 6 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 2 | 14 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | EG050T | 1 | 6 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Major Cations - Dissolved | ED093F | 1 | 4 | 25.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 2 | 17 | 11.76 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 2 | 16 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 1 | 3 | 33.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 1 | 3 | 33.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 3 | 0.00 | 10.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 17 | 11.76 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 2 | 11 | 18.18 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Alkalinity by PC Titrator | ED037-P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Ammonia as N by Discrete analyser | EK055G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Conductivity by PC Titrator | EA010-P | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | EG050T | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Major Cations - Dissolved | ED093F | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 1 | 16 | 6.25 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| Total Phosphorus as P By Discrete Analyser | EK067G | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Ammonia as N by Discrete analyser | EK055G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Conductivity by PC Titrator | EA010-P | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | EG050T | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Major Cations - Dissolved | ED093F | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 1 | 16 | 6.25 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Ammonia as N by Discrete analyser | EK055G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | EG050T | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 1 | 16 | 6.25 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 0 | 3 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 3 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Conductivity by PC Titrator | EA010-P | WATER | In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Calculated TDS (from Electrical Conductivity) | EA016 | WATER | In house: Calculation from Electrical Conductivity (APHA 2510 B) using a conversion factor specified in the analytical report. This method is compliant with NEPM (2013) Schedule B(3) |
| Alkalinity by PC Titrator | ED037-P | WATER | In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3) |
| Sulfate (Turbidimetric) as SO ₄ ²⁻ by Discrete Analyser | ED041G | WATER | In house: Referenced to APHA 4500-SO ₄ . Dissolved sulfate is determined in a 0.45µm filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO ₄ suspension is measured by a photometer and the SO ₄ ²⁻ concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Chloride by Discrete Analyser | ED045G | WATER | In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003 |
| Major Cations - Dissolved | ED093F | WATER | In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)

Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)

Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|--|------------|--------|--|
| Hexavalent Chromium - Total | EG050T | WATER | In house: Referenced to APHA 3500 Cr-B. Hexavalent chromium is determined directly on water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Ammonia as N by Discrete analyser | EK055G | WATER | In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Nitrite as N by Discrete Analyser | EK057G | WATER | In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Nitrate as N by Discrete Analyser | EK058G | WATER | In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3) |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | WATER | In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | WATER | In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Nitrogen as N (TKN + Nox) By Discrete Analyser | EK062G | WATER | In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Phosphorus as P By Discrete Analyser | EK067G | WATER | In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | WATER | In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Ionic Balance by PCT DA and Turbi SO4 DA | EN055 - PG | WATER | In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds | EP075 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |



| <i>Analytical Methods</i> | <i>Method</i> | <i>Matrix</i> | <i>Method Descriptions</i> |
|---|---------------|---------------|--|
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| <i>Preparation Methods</i> | <i>Method</i> | <i>Matrix</i> | <i>Method Descriptions</i> |
| TKN/TP Digestion | EK061/EK067 | WATER | In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3) |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

Client / Client code: AECOMAU
Project: 60592634, GIJPP EES - Contamn Land ASLP analysis
Project Manager: [REDACTED]
Date /time sample rec: Tuesday, 8 January 2019
Date/time Instructions rec: 31/01/2019 10:34
Due date: Tuesday, 5 February 2019
Due date surcharge: 3 day TAT

1
2
3
4
5
6

Environmental Division
Melbourne
Work Order Reference
EM1901269



Teléfono: + 61-3-8549 9600

MS 342

[REDACTED]

From: [REDACTED]@aecom.com>
Sent: Thursday, 31 January 2019 10:34 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: GIJPP EES - Contam Land ASLP analysis

Hi [REDACTED]

Can you please undertake leachate analysis (ASLP) for the following?

Exceeding Soil Hazard Categorisation Thresholds : **Fill Material**

EM1900131

- CPT045_MW05_080119_1.0 – Arsenic 13
- CPT040B_MW04_080119_0.5 – Arsenic 21

EM1900257

- CPT000_MW02_100119_1.0 - Hexavalent Chromium 3

EM1900402

- CPT001_BH109_1400119_0.5 – Arsenic 8
- CPT001_BH108_140119_0.0 – Zinc 11
- CPT001_BH108_140119_0.4 – Arsenic 12
- CPT032_BH11_140119_1.5 – Arsenic 30

EM1900529

- CPT061_BH22_160119_1.5 – Arsenic 22

EM1900531

- CPT002_BH101_0.0 – Benzo(a)pyrene 1
- CPT051A_BH18_0.5 – Fluoride 25

Exceeding Soil Hazard Categorisation Thresholds: **Category C**

EM1900402

- CPT001_BH108_140119_0.0 – Benzo(a)pyrene 11

At 3 Days TAT. Thanks.

[REDACTED]
Senior Environmental Engineer

[REDACTED]
[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

[LinkedIn](#) [Twitter](#) [Facebook](#) [Instagram](#)

[REDACTED]

From: [REDACTED]@aecom.com>
Sent: Thursday, 31 January 2019 3:38 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: RESULTS & EDD for ALS Workorder : EM1900402 | Overall Description: GIJPP EES

Follow Up Flag: Follow up
Flag Status: Flagged

Hi [REDACTED]
Can you please analyse one more soil sample from this batch?
CPT039_BH13_0.9 for IWRG621? Thanks. 18

[REDACTED]
Senior Environmental Engineer
[REDACTED]

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

[LinkedIn](#) [Twitter](#) [Facebook](#) [Instagram](#)

From: angel-no-reply@alsglobal.com [mailto:angel-no-reply@alsglobal.com]
Sent: Thursday, 24 January 2019 1:57 PM
To: [REDACTED]
Subject: RESULTS & EDD for ALS Workorder : EM1900402 | Overall Description: GIJPP EES



Deliverables for ALS Workorder EM1900402

Project: 60592634

Overall Description: GIJPP EES

Dear [REDACTED]

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1901269**

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 3 |
| Order number | : ---- | Quote number | : EP2016AECOMAU0014 (EN/096/18) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : GIJPP Groundwater Study | | |
| Sampler | : | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 08-Jan-2019 17:10 | Issue Date | : 31-Jan-2019 |
| Client Requested Due Date | : 05-Feb-2019 | Scheduled Reporting Date | : 05-Feb-2019 |

Delivery Details

| | | | |
|----------------------|-------------------|------------------------------------|-----------------|
| Mode of Delivery | : Samples On Hand | Security Seal | : Not Available |
| No. of coolers/boxes | : ---- | Temperature | : ---- |
| Receipt Detail | : | No. of samples received / analysed | : 11 / 11 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- This is a rebatch of EM1900131, EM1900257, EM1900402, EM1900529 and EM1900531.

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | SOIL - E Moisture | SOIL - E Leachab | SOIL - E Hexaval | SOIL - E Fluoride | SOIL - E ASP Le | SOIL - E PA | SOIL - P IWRG 62 |
|----------------------|-----------------------------|-------------------------|-------------------|------------------|------------------|-------------------|-----------------|-------------|------------------|
| EM1901269-001 | 08-Jan-2019 00:00 | CPT045_MW05_080119_1. | | ✓ | | | ✓ | | |
| EM1901269-002 | 08-Jan-2019 00:00 | CPT040B_MW04_080119_. | | ✓ | | | ✓ | | |
| EM1901269-003 | 10-Jan-2019 00:00 | CPT000_MW02_100119_1. | | | ✓ | | ✓ | | |
| EM1901269-004 | 14-Jan-2019 00:00 | CPT001_BH109_140119_... | | ✓ | | | ✓ | | |
| EM1901269-005 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | | ✓ | | | ✓ | ✓ | |
| EM1901269-006 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | | ✓ | | | ✓ | | |
| EM1901269-007 | 14-Jan-2019 00:00 | CPT032_BH11_140119_1... | | ✓ | | | ✓ | | |
| EM1901269-008 | 16-Jan-2019 00:00 | CPT061_BH22_160119_1... | | ✓ | | | ✓ | | |
| EM1901269-009 | 16-Jan-2019 00:00 | CPT002_BH101_0.0 | | | | | ✓ | ✓ | |
| EM1901269-010 | 16-Jan-2019 00:00 | CPT051A_BH18_0.5 | | | | ✓ | ✓ | | |
| EM1901269-011 | 14-Jan-2019 00:00 | CPT039_BH13_0.9 | ✓ | | | | | | ✓ |

Matrix: SOIL

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Container | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|---|---------------------------------|--------------------|------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA001: pH in soil using a 0.01M CaCl2 extract | | | | | | | |
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | 21-Jan-2019 | 21-Jan-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EA055: Moisture Content | | | | | | | |
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | ---- | 28-Jan-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EK026SF: Total Cyanide by Segmented Flow Analyser | | | | | | | |
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | 28-Jan-2019 | 11-Feb-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EN60a: ASLP for Non & Semivolatile Analytes | | | | | | | |
| CPT001_BH108_140 | Non-Volatile Leach: 14 day HT(ε | 28-Jan-2019 | ---- | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| CPT002_BH101_0.0 | Non-Volatile Leach: 14 day HT(ε | 30-Jan-2019 | ---- | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EP066-EM: PCB - VIC EPA 448.3 Screen | | | | | | | |
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | 28-Jan-2019 | 09-Mar-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EP071-EM: TRH - Semivolatile Fraction | | | | | | | |



| | | | | | | | |
|--|------------------------------|-------------|-------------|-------------|---|-------------|---|
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | 28-Jan-2019 | 09-Mar-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EP074-UT: Volatile Organic Compounds - Ultra-trace | | | | | | | |
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | 21-Jan-2019 | 21-Jan-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EP075-EM: Semivolatile Organic Compounds - Waste Classification | | | | | | | |
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | 28-Jan-2019 | 09-Mar-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

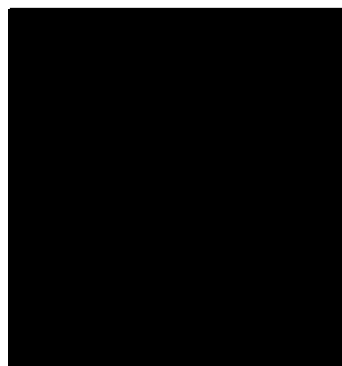
- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
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- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1901269

| | |
|---|---|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : 60592634</p> <p>C-O-C number : ----</p> <p>Site : GIJPP Groundwater Study</p> <p>Sampler :</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 3</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|---|---|

Dates

| | |
|---|---|
| Date Samples Received : 08-Jan-2019 17:10 | Issue Date : 31-Jan-2019 |
| Client Requested Due Date : 05-Feb-2019 | Scheduled Reporting Date : 05-Feb-2019 |

Delivery Details

| | |
|------------------------------------|--|
| Mode of Delivery : Samples On Hand | Security Seal : Not Available |
| No. of coolers/boxes : ---- | Temperature : ---- |
| Receipt Detail : | No. of samples received / analysed : 11 / 11 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- This is a rebatch of EM1900131, EM1900257, EM1900402, EM1900529 and EM1900531.

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

| | | |
|---------------|-------------------|---------------------------|
| EM1901269-001 | : [08-Jan-2019] | : CPT045_MW05_080119_1.0 |
| EM1901269-002 | : [08-Jan-2019] | : CPT040B_MW04_080119_0.5 |
| EM1901269-003 | : [10-Jan-2019] | : CPT000_MW02_100119_1.0 |
| EM1901269-004 | : [14-Jan-2019] | : CPT001_BH109_140119_0.5 |
| EM1901269-005 | : [14-Jan-2019] | : CPT001_BH108_140119_0.0 |
| EM1901269-006 | : [14-Jan-2019] | : CPT001_BH108_140119_0.4 |
| EM1901269-007 | : [14-Jan-2019] | : CPT032_BH11_140119_1.5 |
| EM1901269-008 | : [16-Jan-2019] | : CPT061_BH22_160119_1.5 |

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

Matrix: SOIL

| Laboratory sample ID | Client sampling date / time | Client sample ID | SOIL - E/
Moisture | SOIL - E/
Leachability | SOIL - E/
Hexavalent Chromium | SOIL - E/
Fluoride | SOIL - E/
ASLP Leachability | SOIL - E/
SIM - PAHs | SOIL - P/
IWRG 62 |
|----------------------|-----------------------------|-------------------------|-----------------------|---------------------------|----------------------------------|-----------------------|--------------------------------|-------------------------|----------------------|
| EM1901269-001 | 08-Jan-2019 00:00 | CPT045_MW05_080119_1. | | ✓ | | | ✓ | | |
| EM1901269-002 | 08-Jan-2019 00:00 | CPT040B_MW04_080119_. | | ✓ | | | ✓ | | |
| EM1901269-003 | 10-Jan-2019 00:00 | CPT000_MW02_100119_1. | | | ✓ | | ✓ | | |
| EM1901269-004 | 14-Jan-2019 00:00 | CPT001_BH109_140119_... | | ✓ | | | ✓ | | |
| EM1901269-005 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | | ✓ | | | ✓ | ✓ | |
| EM1901269-006 | 14-Jan-2019 00:00 | CPT001_BH108_140119_... | | ✓ | | | ✓ | | |
| EM1901269-007 | 14-Jan-2019 00:00 | CPT032_BH11_140119_1... | | ✓ | | | ✓ | | |
| EM1901269-008 | 16-Jan-2019 00:00 | CPT061_BH22_160119_1... | | ✓ | | | ✓ | | |
| EM1901269-009 | 16-Jan-2019 00:00 | CPT002_BH101_0.0 | | | | | ✓ | ✓ | |
| EM1901269-010 | 16-Jan-2019 00:00 | CPT051A_BH18_0.5 | | | | ✓ | ✓ | | |
| EM1901269-011 | 14-Jan-2019 00:00 | CPT039_BH13_0.9 | ✓ | | | | | | ✓ |

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Container | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|---|---------------------------------|--------------------|------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA001: pH in soil using a 0.01M CaCl2 extract | | | | | | | |
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | 21-Jan-2019 | 21-Jan-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EA055: Moisture Content | | | | | | | |
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | ---- | 28-Jan-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EK026SF: Total Cyanide by Segmented Flow Analyser | | | | | | | |
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | 28-Jan-2019 | 11-Feb-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EN60a: ASLP for Non & Semivolatile Analytes | | | | | | | |
| CPT001_BH108_140 | Non-Volatile Leach: 14 day HT(ε | 28-Jan-2019 | ---- | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| CPT002_BH101_0.0 | Non-Volatile Leach: 14 day HT(ε | 30-Jan-2019 | ---- | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EP066-EM: PCB - VIC EPA 448.3 Screen | | | | | | | |
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | 28-Jan-2019 | 09-Mar-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EP071-EM: TRH - Semivolatile Fraction | | | | | | | |

Issue Date : 31-Jan-2019
Page : 3 of 3
Work Order : EM1901269 Amendment 0
Client : AECOM Australia Pty Ltd



| | | | | | | | |
|--|------------------------------|-------------|-------------|-------------|---|-------------|---|
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | 28-Jan-2019 | 09-Mar-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EP074-UT: Volatile Organic Compounds - Ultra-trace | | | | | | | |
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | 21-Jan-2019 | 21-Jan-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |
| EP075-EM: Semivolatile Organic Compounds - Waste Classification | | | | | | | |
| CPT039_BH13_0.9 | Soil Glass Jar - Unpreserved | 28-Jan-2019 | 09-Mar-2019 | 08-Jan-2019 | ✓ | 31-Jan-2019 | ✗ |

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

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- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

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CERTIFICATE OF ANALYSIS

Work Order : **EM1901269**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number : 60592634
C-O-C number : ----
Sampler : ----
Site : GIJPP Groundwater Study
Quote number : EN/096/18
No. of samples received : 11
No. of samples analysed : 11

Page : 1 of 12
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 08-Jan-2019 17:10
Date Analysis Commenced : 01-Feb-2019
Issue Date : 06-Feb-2019 09:07



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|-------------------------------------|---------------------------------------|
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- EG048G: EM1901273 #1 Poor matrix spike recovery for hexavalent chromium due to matrix effects.
- This is a rebatch of EM1900131, EM1900257, EM1900402, EM1900529 and EM1900531.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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Sub-Matrix: ASLP LEACHATE
 (Matrix: WATER)

Client sample ID

| | | | | CPT045_MW05_0801
19_1.0 | CPT040B_MW04_080
119_0.5 | CPT000_MW02_1001
19_1.0 | CPT001_BH109_1401
19_0.5 | CPT001_BH108_1401
19_0.0 |
|---|------------|------|------|----------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 08-Jan-2019 00:00 | 08-Jan-2019 00:00 | 10-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1901269-001 | EM1901269-002 | EM1901269-003 | EM1901269-004 | EM1901269-005 |
| | | | | Result | Result | Result | Result | Result |
| EG005C: Leachable Metals by ICPAES | | | | | | | | |
| Arsenic | 7440-38-2 | 0.1 | mg/L | <0.1 | <0.1 | ---- | <0.1 | ---- |
| Zinc | 7440-66-6 | 0.1 | mg/L | ---- | ---- | ---- | ---- | 6.7 |
| EG050C: Hexvalent Chromium - Leachable | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.10 | mg/L | ---- | ---- | <0.10 | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | ---- | ---- | ---- | ---- | <0.5 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | ---- | ---- | ---- | ---- | 39.5 |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | ---- | ---- | ---- | ---- | 74.5 |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | ---- | ---- | ---- | ---- | 117 |
| EP075(SIM)T: PAH Surrogates | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | ---- | ---- | ---- | ---- | 88.8 |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | ---- | ---- | ---- | ---- | 81.9 |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | ---- | ---- | ---- | ---- | 82.4 |



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Sub-Matrix: ASLP LEACHATE
 (Matrix: WATER)

Client sample ID

| | | | | CPT001_BH108_1401
19_0.4 | CPT032_BH11_14011
9_1.5 | CPT061_BH22_16011
9_1.5 | CPT002_BH101_0.0 | CPT051A_BH18_0.5 |
|---|------------|-----|------|-----------------------------|----------------------------|----------------------------|-------------------|-------------------|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1901269-006 | EM1901269-007 | EM1901269-008 | EM1901269-009 | EM1901269-010 |
| | | | | Result | Result | Result | Result | Result |
| EG005C: Leachable Metals by ICPAES | | | | | | | | |
| Arsenic | 7440-38-2 | 0.1 | mg/L | <0.1 | <0.1 | <0.1 | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | ---- | ---- | ---- | ---- | 0.1 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | ---- | ---- | ---- | <0.5 | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | ---- | ---- | ---- | 14.4 | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | ---- | ---- | ---- | 77.7 | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | ---- | ---- | ---- | 112 | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | ---- | ---- | ---- | 85.4 | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | ---- | ---- | ---- | 79.4 | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | ---- | ---- | ---- | 80.9 | ---- |



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|------------------------------------|------------|-----|---------|------------------|----------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT045_MW05_0801
19_1.0 | CPT040B_MW04_080
119_0.5 | CPT000_MW02_1001
19_1.0 | CPT001_BH109_1401
19_0.5 | CPT001_BH108_1401
19_0.0 |
| Client sampling date / time | | | | | 08-Jan-2019 00:00 | 08-Jan-2019 00:00 | 10-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1901269-001 | EM1901269-002 | EM1901269-003 | EM1901269-004 | EM1901269-005 | |
| | | | | Result | Result | Result | Result | Result | |
| EN60: ASLP Leaching Procedure | | | | | | | | | |
| Initial pH | ---- | 0.1 | pH Unit | 5.9 | 5.8 | 5.2 | 7.6 | 5.9 | |
| After HCl pH | ---- | 0.1 | pH Unit | 1.5 | 1.7 | 1.5 | 1.5 | 1.5 | |
| Extraction Fluid pH | ---- | 0.1 | pH Unit | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Final pH | ---- | 0.1 | pH Unit | 4.8 | 4.8 | 4.8 | 6.1 | 4.8 | |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT001_BH108_1401
19_0.4 | CPT032_BH11_14011
9_1.5 | CPT061_BH22_16011
9_1.5 | CPT002_BH101_0.0 | CPT051A_BH18_0.5 |
|-------------------------------|------------|-----|---------|-----------------------------|----------------------------|----------------------------|-------------------|-------------------|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1901269-006 | EM1901269-007 | EM1901269-008 | EM1901269-009 | EM1901269-010 |
| | | | | Result | Result | Result | Result | Result |
| EN60: ASLP Leaching Procedure | | | | | | | | |
| Initial pH | ---- | 0.1 | pH Unit | 5.5 | 5.1 | 5.1 | 5.3 | 5.6 |
| After HCl pH | ---- | 0.1 | pH Unit | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Extraction Fluid pH | ---- | 0.1 | pH Unit | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Final pH | ---- | 0.1 | pH Unit | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 |



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|--|-------------------|-----|---------|-------------------|-----------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT039_BH13_0.9 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | 14-Jan-2019 00:00 | ---- | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1901269-011 | ----- | ----- | ----- | ----- | ----- |
| Result | | | | ---- | ---- | ---- | ---- | ---- | ---- |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | 5.8 | ---- | ---- | ---- | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 14.2 | ---- | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | ---- | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | ---- | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | 11 | ---- | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | ---- | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | <5 | ---- | ---- | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | 0.1 | ---- | ---- | ---- | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | ---- | ---- | ---- | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | 500 | ---- | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | ---- | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | ---- | ---- | ---- | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | <0.2 | ---- | ---- | ---- | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | ---- | ---- |



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|---|-------------------|------|-------|-------------------|-----------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT039_BH13_0.9 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | 14-Jan-2019 00:00 | ---- | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1901269-011 | ----- | ----- | ----- | ----- | ----- |
| Result | | | | ---- | ---- | ---- | ---- | ---- | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | <1 | ---- | ---- | ---- | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | ---- | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | ---- | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | ---- | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | ---- | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |

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EP075I: Organochlorine Pesticides



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|---|-------------------------|------|-------|-------------------|-----------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT039_BH13_0.9 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | 14-Jan-2019 00:00 | ---- | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1901269-011 | ----- | ----- | ----- | ----- | ----- |
| Result | | | | ---- | ---- | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-29-3 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | ---- | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | ---- |



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|---|-------------|-------|-------|-------------------|-----------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT039_BH13_0.9 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | 14-Jan-2019 00:00 | ---- | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1901269-011 | ----- | ----- | ----- | ----- | ----- |
| Result | | | | ---- | ---- | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued | | | | | | | | | |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 112 | ---- | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 77.1 | ---- | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 63.8 | ---- | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 92.3 | ---- | ---- | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 101 | ---- | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 79.0 | ---- | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 83.8 | ---- | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 109 | ---- | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 85.6 | ---- | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 98.9 | ---- | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 92.4 | ---- | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 102 | ---- | ---- | ---- | ---- | ---- |



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| Sub-Matrix: ASLP LEACHATE | | □□□□ □□□ □ s □ | |
|--|------------|----------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |

| Sub-Matrix: SOIL | | □□□□ □□□ □ s □ | |
|---|------------|----------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1901269 | Page | : 1 of 8 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 08-Jan-2019 17:10 |
| Order number | : 60592634 | Date Analysed | : 01-Feb-2019 |
| C-O-C number | : ---- | Date Issued | : 06-Feb-2019 09:08 |
| No. of samples received | : 11 | | |
| No. of samples analysed | : 11 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides evaluation of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Red shading is not applied to the 'Summary of Thresholds Reached or Exceeded'.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| Client Sample ID | ALS Sample ID | Compound | Method | LOR | Limits | Result |
|------------------|---------------|----------|--------|-----|-------------|-----------|
| CPT039_BH13_0.9 | EM1901269-011 | Fluoride | EK040T | 40 | < 450 mg/kg | 500 mg/kg |

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT039_BH13_0.9 | 14-Jan-2019 15:00 | EM1901269-011 | ----- | ----- | ----- | ----- | | |
|--|--------------|------|---------|--------------------|---------------|-----------------|-------------------|---------------|-------|-------|-------|-------|---------|---------|
| | | | | Sampling date/time | | | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | □□ □□
□□ □□ | □□□□
□□ □□ | | | | | | | | | |
| Compound | Method | LOR | Unit | | | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.8 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | <5 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | <5 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 11 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | 0.1 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 500 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 | ---- | ---- | ---- | ---- | ---- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT039_BH13_0.9 | ---- | ---- | ---- | ---- |
|---|--------------|------|-------|--------------------|-------|-----------------|-------|-------|-------|-------|
| | | | | Sampling date/time | | | | | | |
| | | | | 14-Jan-2019 15:00 | | | | | | |
| Compound | Method | LOR | Unit | ---- | ---- | EM1901269-011 | ----- | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 | ---- | ---- | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | ---- | ---- | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 | ---- | ---- | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | ---- | ---- | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 | ---- | ---- | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 | ---- | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 | ---- | ---- | ---- | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| | | | | | | | | | | | | | | | | | |
|--|--------------|------|---------|--------------------|-------|-----------------|------|------|------|------|---------|---------|----------------------|------|------|------|------|
| Sub-Matrix: SOIL | | | | Client sample ID | | CPT039_BH13_0.9 | ---- | ---- | ---- | ---- | | | | | | | |
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ | 14-Jan-2019
15:00 | ---- | ---- | ---- | ---- |
| | | | | □□ □□ | □□□□ | | | | | | | | | | | | |
| Compound | Method | LOR | Unit | □□ □□ | □□□□ | | | | | | | | | | | | |
| | | | | □□ □□ | □□ □□ | | | | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.8 | ---- | ---- | ---- | ---- | | | | | | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | <5 | ---- | ---- | ---- | ---- | | | | | | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 | ---- | ---- | ---- | ---- | | | | | | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | <5 | ---- | ---- | ---- | ---- | | | | | | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | <5 | ---- | ---- | ---- | ---- | | | | | | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 | ---- | ---- | ---- | ---- | | | | | | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 11 | ---- | ---- | ---- | ---- | | | | | | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 | ---- | ---- | ---- | ---- | | | | | | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 | ---- | ---- | ---- | ---- | | | | | | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 | ---- | ---- | ---- | ---- | | | | | | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | <5 | ---- | ---- | ---- | ---- | | | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | 0.1 | ---- | ---- | ---- | ---- | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | ---- | ---- | ---- | ---- | | | | | | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | ---- | ---- | ---- | ---- | | | | | | | |
| EK040T: Fluoride Total | | | | | | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 500 | ---- | ---- | ---- | ---- | | | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | ---- | ---- | ---- | ---- | | | | | | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 | ---- | ---- | ---- | ---- | | | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | ---- | ---- | ---- | ---- | | | | | | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | ---- | ---- | ---- | ---- | | | | | | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 | ---- | ---- | ---- | ---- | | | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | ---- | ---- | ---- | ---- | | | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 | ---- | ---- | ---- | ---- | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT039_BH13_0.9 | ---- | ---- | ---- | ---- | | |
|---|--------------|------|-------|--------------------|---------------|-----------------|-------|-------|-------|-------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | 14-Jan-2019 15:00 | EM1901269-011 | | | | | | ----- | ----- |
| Compound | Method | LOR | Unit | □□ □□ | □□□□ | EM1901269-011 | ----- | ----- | ----- | ----- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 | ---- | ---- | ---- | ---- | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 | ---- | ---- | ---- | ---- | | |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | ---- | ---- | ---- | ---- | | |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 | ---- | ---- | ---- | ---- | | |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 | ---- | ---- | ---- | ---- | | |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 | ---- | ---- | ---- | ---- | | |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 | ---- | ---- | ---- | ---- | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 | ---- | ---- | ---- | ---- | | |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | <50 | ---- | ---- | ---- | ---- | | |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT039_BH13_0.9 | ---- | ---- | ---- | ---- | | | | | | | |
|--|--------------|------|---------|--------------------|------|-----------------|------|------|------|------|---------|---------|----------------------|------|------|------|------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ | 14-Jan-2019
15:00 | ---- | ---- | ---- | ---- |
| | | | | □□ □□ | □□□□ | | | | | | | | | | | | |
| Compound | Method | LOR | Unit | | | | | | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.8 | ---- | ---- | ---- | ---- | | | | | | | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | <5 | ---- | ---- | ---- | ---- | | | | | | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 | ---- | ---- | ---- | ---- | | | | | | | |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | <5 | ---- | ---- | ---- | ---- | | | | | | | |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | <5 | ---- | ---- | ---- | ---- | | | | | | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 | ---- | ---- | ---- | ---- | | | | | | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 11 | ---- | ---- | ---- | ---- | | | | | | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 | ---- | ---- | ---- | ---- | | | | | | | |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 | ---- | ---- | ---- | ---- | | | | | | | |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 | ---- | ---- | ---- | ---- | | | | | | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | <5 | ---- | ---- | ---- | ---- | | | | | | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | 0.1 | ---- | ---- | ---- | ---- | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | ---- | ---- | ---- | ---- | | | | | | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | ---- | ---- | ---- | ---- | | | | | | | |
| EK040T: Fluoride Total | | | | | | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 500 | ---- | ---- | ---- | ---- | | | | | | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 | ---- | ---- | ---- | ---- | | | | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | ---- | ---- | ---- | ---- | | | | | | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 | ---- | ---- | ---- | ---- | | | | | | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 | ---- | ---- | ---- | ---- | | | | | | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | ---- | ---- | ---- | ---- | | | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 | ---- | ---- | ---- | ---- | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | | |
|---|--------------|------|-------|------------------|------|-------|-------------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL | | | | Client sample ID | | | CPT039_BH13_0.9 | ---- | ---- | ---- | ---- |
| Sampling date/time | | | | | | | 14-Jan-2019 15:00 | ---- | ---- | ---- | ---- |
| Compound | Method | LOR | Unit | | | | EM1901269-011 | ----- | ----- | ----- | ----- |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | ---- | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 | ---- | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | ---- | ---- | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | ---- | ---- | ---- | ---- | ---- |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1901269 | Page | : 1 of 11 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 08-Jan-2019 |
| Order number | : 60592634 | Date Analysis Commenced | : 01-Feb-2019 |
| C-O-C number | : ---- | Issue Date | : 06-Feb-2019 |
| Sampler | : ---- | | |
| Site | : GIJPP Groundwater Study | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 11 | | |
| No. of samples analysed | : 11 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]
[REDACTED]

Senior Inorganic Chemist
Senior Inorganic Instrument Chemist
Senior Organic Chemist

Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|-------------------------|------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2165168) | | | | | | | | | |
| EM1901269-011 | CPT039_BH13_0.9 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.8 | 4.9 | 16.8 | 0% - 20% |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2165281) | | | | | | | | | |
| EM1901164-004 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 11.4 | 11.3 | 1.32 | 0% - 50% |
| EM1901269-011 | CPT039_BH13_0.9 | EA055: Moisture Content | ---- | 0.1 | % | 14.2 | 13.4 | 5.42 | 0% - 50% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2165386) | | | | | | | | | |
| EM1901096-007 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 36 | 34 | 5.74 | 0% - 50% |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 10 | 10 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 10 | 10 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 33 | 20 | 50.2 | No Limit |
| EM1901096-023 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 70 | 68 | 4.00 | 0% - 20% |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 20 | 20 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 8 | 7 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005T: Total Metals by ICP-AES (QC Lot: 2165386) - continued | | | | | | | | | |
| EM1901096-023 | Anonymous | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 26 | 22 | 15.2 | No Limit |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2165385) | | | | | | | | | |
| EM1901096-007 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1901096-023 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2165693) | | | | | | | | | |
| EM1901269-011 | CPT039_BH13_0.9 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2165823) | | | | | | | | | |
| EM1901096-027 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2165184) | | | | | | | | | |
| EM1901216-007 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 140 | 90 | 37.9 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2165030) | | | | | | | | | |
| EM1901269-011 | CPT039_BH13_0.9 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2165033) | | | | | | | | | |
| EM1901186-005 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2165033) | | | | | | | | | |
| EM1901186-005 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2165033) | | | | | | | | | |
| EM1901186-005 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|-------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2165033) - continued | | | | | | | | | |
| EM1901186-005 | Anonymous | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2165028) | | | | | | | | | |
| EM1901269-011 | CPT039_BH13_0.9 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2165028) | | | | | | | | | |
| EM1901269-011 | CPT039_BH13_0.9 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit | | |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2165028) | | | | | | | | | |
| EM1901269-011 | CPT039_BH13_0.9 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |

Sub-Matrix: **WATER**

Page : 6 of 11
 Work Order : EM1901269
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------------|-----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005C: Leachable Metals by ICPAES (QC Lot: 2168273) - continued | | | | | | | | | |
| EM1901250-002 | Anonymous | EG005C: Arsenic | 7440-38-2 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| | | EG005C: Zinc | 7440-66-6 | 0.1 | mg/L | 1.2 | 1.2 | 0.00 | 0% - 50% |
| EM1901287-005 | Anonymous | EG005C: Arsenic | 7440-38-2 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| | | EG005C: Zinc | 7440-66-6 | 0.1 | mg/L | 0.2 | 0.2 | 0.00 | No Limit |
| EG050C: Hexvalent Chromium - Leachable (QC Lot: 2168180) | | | | | | | | | |
| EM1901269-003 | CPT000_MW02_100119_1.0 | EG050C: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.10 | <0.10 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG005T: Total Metals by ICP-AES (QCLot: 2165386) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 93.0 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 91.0 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 95.1 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 93.0 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 86.6 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 97.4 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 97.5 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 82.2 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 86.7 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 102 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2165385) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 85.4 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2165693) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 97.6 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2165823) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 95.4 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2165184) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 97.5 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2165030) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 108 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2165033) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 84.3 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 83.0 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 78.6 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 80.0 | 66 | 115 |
| | 106-42-3 | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 93.3 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 82.7 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2165033) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 84.9 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2165033) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 88.2 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 76.5 | 56 | 125 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074I: Volatile Halogenated Compounds (QCLot: 2165033) - continued | | | | | | | | |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 95.7 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 83.1 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 84.7 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 85.8 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 76.5 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 77.7 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 98.6 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 79.9 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 96.2 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 80.7 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 94.6 | 71 | 118 |
| EP074-UT: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 112 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 66.5 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.6 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 80.8 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 83.7 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 72.6 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2165028) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 108 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 109 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 113 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 128 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 108 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 112 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 90.6 | 65 | 124 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 98.7 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 56.9 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2165028) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 110 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 117 | 65 | 126 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 115 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 112 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 116 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 117 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 95.0 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 109 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | # 132 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 119 | 36 | 137 |



Sub-Matrix: **SOIL**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2165028) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 107 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 112 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 110 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 99.4 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 1.2 mg/kg | 81.8 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 99.1 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 99.7 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 91.1 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 97.5 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 122 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 114 | 70 | 130 |
| EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 118 | 72 | 134 |
| EP075-EM: Dibenzo(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 118 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 118 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2165028) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 111 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 95.0 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 125 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 112 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 101 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 99.4 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 101 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 92.0 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 94.5 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 94.9 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 112 | 64 | 137 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 104 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 108 | 72 | 132 |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 139 | 42 | 160 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | # 14.7 | 55 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 110 | 73 | 132 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 113 | 75 | 134 |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 108 | 73 | 133 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 115 | 67 | 133 |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 116 | 67 | 135 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2165029) | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 97.6 | 70 | 120 |



| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------|-----|-------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2165029) - continued | | | | | | | | |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 105 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 100 | 77 | 117 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2165033) | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 72.8 | 63 | 122 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2165029) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 106 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 102 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 97.6 | 68 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2165033) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 71.6 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTE
X | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- |

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG005C: Leachable Metals by ICPAES (QCLot: 2168273) | | | | | | | | |
| EG005C: Arsenic | 7440-38-2 | 0.1 | mg/L | <0.1 | 1 mg/L | 112 | 89 | 119 |
| EG005C: Zinc | 7440-66-6 | 0.1 | mg/L | <0.1 | 1 mg/L | 106 | 87 | 114 |
| EG050C: Hexavalent Chromium - Leachable (QCLot: 2168180) | | | | | | | | |
| EG050C: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 97.2 | 89 | 112 |
| EK040P: Fluoride by PC Titrator (QCLot: 2169182) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 104 | 87 | 117 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2168183) | | | | | | | | |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 95.0 | 54 | 124 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------|------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike
Concentration | SpikeRecovery(%) | Recovery Limits (%) | |
| | | | | | MS | Low | High |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | | | | |
| EG005T: Total Metals by ICP-AES (QCLot: 2165386) | | | | | | | |
| EM1901096-010 | Anonymous | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 91.7 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 86.8 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 111 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 86.6 | 76 | 124 |



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2165386) - continued | | | | | | | |
| EM1901096-010 | Anonymous | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 95.9 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 96.9 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 78.8 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 89.7 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2165385) | | | | | | | |
| EM1901096-010 | Anonymous | EG035T: Mercury | 7439-97-6 | 5 mg/kg | 102 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2165693) | | | | | | | |
| EM1901273-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | # 57.6 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2165823) | | | | | | | |
| EM1901269-011 | CPT039_BH13_0.9 | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 99.7 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2165184) | | | | | | | |
| EM1901217-001 | Anonymous | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 94.5 | 70 | 130 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2165033) | | | | | | | |
| EM1901200-006 | Anonymous | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 88.4 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 88.1 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2165033) | | | | | | | |
| EM1901200-006 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 79.7 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 80.6 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 90.5 | 28 | 134 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2165033) | | | | | | | |
| EM1901200-006 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 64.5 | 43 | 111 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2165033) | | | | | | | |
| EM1901200-006 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 63.6 | 42 | 106 |
| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005C: Leachable Metals by ICPAES (QCLot: 2168273) | | | | | | | |
| EM1901259-014 | Anonymous | EG005C: Arsenic | 7440-38-2 | 1 mg/L | 113 | 88 | 124 |
| | | EG005C: Zinc | 7440-66-6 | 1 mg/L | 102 | 85 | 123 |

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|---------------------------|-------------------------|------------------------------------|
| Work Order | : EM1901269 | Page | : 1 of 11 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 08-Jan-2019 |
| Site | : GIJPP Groundwater Study | Issue Date | : 06-Feb-2019 |
| Sampler | : ---- | No. of samples received | : 11 |
| Order number | : 60592634 | No. of samples analysed | : 11 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|---------------------|------------|--------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) | QC-2165028-001 | ---- | Dinoseb | 88-85-7 | 132 % | 51-123% | Recovery greater than upper control limit |
| EP075I: Organochlorine Pesticides | QC-2165028-001 | ---- | Endrin | 72-20-8 | 14.7 % | 55-148% | Recovery less than lower control limit |
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | EM1901273--001 | Anonymous | Hexavalent Chromium | 18540-29-9 | 57.6 % | 58-114% | Recovery less than lower data quality objective |

Matrix: SOIL

[illegible]



Matrix: **SOIL**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EP075A: Phenolic Compounds (Halogenated) - Analysis Holding Time Compliance | | | | | | |
| Soil Glass Jar - Unpreserved
CPT039_BH13_0.9 | 01-Feb-2019 | 28-Jan-2019 | 4 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | |
| Soil Glass Jar - Unpreserved
CPT039_BH13_0.9 | 01-Feb-2019 | 28-Jan-2019 | 4 | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | |
| Soil Glass Jar - Unpreserved
CPT039_BH13_0.9 | 01-Feb-2019 | 28-Jan-2019 | 4 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | |
| Soil Glass Jar - Unpreserved
CPT039_BH13_0.9 | 01-Feb-2019 | 28-Jan-2019 | 4 | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | |
| Soil Glass Jar - Unpreserved
CPT039_BH13_0.9 | 01-Feb-2019 | 21-Jan-2019 | 11 | 01-Feb-2019 | 21-Jan-2019 | 11 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | |
| Soil Glass Jar - Unpreserved
CPT039_BH13_0.9 | 01-Feb-2019 | 21-Jan-2019 | 11 | 01-Feb-2019 | 21-Jan-2019 | 11 |

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Matrix Spikes (MS) | | | | | |
| PCB - VIC EPA 448.3 Screen | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---------------------------------|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| Fluoride by PC Titrator | 0 | 1 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | 0 | 9 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| Fluoride by PC Titrator | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Leachable | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | 0 | 9 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 21-Jan-2019 | ✖ | 01-Feb-2019 | 01-Feb-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT039_BH13_0.9 | 14-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 28-Jan-2019 | ✖ |
| EG005T: Total Metals by ICP-AES | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT039_BH13_0.9 | 14-Jan-2019 | 02-Feb-2019 | 13-Jul-2019 | ✓ | 04-Feb-2019 | 13-Jul-2019 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
CPT039_BH13_0.9 | 14-Jan-2019 | 02-Feb-2019 | 11-Feb-2019 | ✓ | 05-Feb-2019 | 11-Feb-2019 | ✓ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 11-Feb-2019 | ✓ | 01-Feb-2019 | 08-Feb-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 28-Jan-2019 | ✖ | 04-Feb-2019 | 15-Feb-2019 | ✓ |
| EK040T: Fluoride Total | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 11-Feb-2019 | ✓ | 05-Feb-2019 | 11-Feb-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EN60: ASLP Leaching Procedure | | | | | | | |
| Non-Volatile Leach: 14 day HT(e.g. SV organics) (EN60a)
CPT001_BH108_140119_0.0 | 14-Jan-2019 | 01-Feb-2019 | 28-Jan-2019 | ✖ | ---- | ---- | ---- |
| Non-Volatile Leach: 14 day HT(e.g. SV organics) (EN60a)
CPT002_BH101_0.0 | 16-Jan-2019 | 01-Feb-2019 | 30-Jan-2019 | ✖ | ---- | ---- | ---- |
| Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN60a)
CPT045_MW05_080119_1.0, CPT040B_MW04_080119_0.5 | 08-Jan-2019 | 01-Feb-2019 | 07-Jul-2019 | ✔ | ---- | ---- | ---- |
| Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN60a)
CPT001_BH109_140119_0.5, CPT001_BH108_140119_0.4,
CPT032_BH11_140119_1.5 | 14-Jan-2019 | 01-Feb-2019 | 13-Jul-2019 | ✔ | ---- | ---- | ---- |
| Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN60a)
CPT061_BH22_160119_1.5 | 16-Jan-2019 | 01-Feb-2019 | 15-Jul-2019 | ✔ | ---- | ---- | ---- |
| Non-Volatile Leach: 28 day HT(e.g. Hg, CrVI) (EN60a)
CPT000_MW02_100119_1.0 | 10-Jan-2019 | 01-Feb-2019 | 07-Feb-2019 | ✔ | ---- | ---- | ---- |
| Non-Volatile Leach: 28 day HT(e.g. Hg, CrVI) (EN60a)
CPT051A_BH18_0.5 | 16-Jan-2019 | 01-Feb-2019 | 13-Feb-2019 | ✔ | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 28-Jan-2019 | ✖ | 01-Feb-2019 | 13-Mar-2019 | ✔ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 21-Jan-2019 | ✖ | 01-Feb-2019 | 21-Jan-2019 | ✖ |
| EP074H: Naphthalene | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 21-Jan-2019 | ✖ | 01-Feb-2019 | 21-Jan-2019 | ✖ |
| EP074I: Volatile Halogenated Compounds | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 21-Jan-2019 | ✖ | 01-Feb-2019 | 21-Jan-2019 | ✖ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 28-Jan-2019 | ✖ | 01-Feb-2019 | 13-Mar-2019 | ✔ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 28-Jan-2019 | ✖ | 01-Feb-2019 | 13-Mar-2019 | ✔ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 28-Jan-2019 | ✖ | 01-Feb-2019 | 13-Mar-2019 | ✔ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 28-Jan-2019 | ✖ | 01-Feb-2019 | 13-Mar-2019 | ✔ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 28-Jan-2019 | ✖ | 01-Feb-2019 | 13-Mar-2019 | ✔ |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 21-Jan-2019 | ✖ | 01-Feb-2019 | 21-Jan-2019 | ✖ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 28-Jan-2019 | ✖ | 01-Feb-2019 | 13-Mar-2019 | ✔ |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT039_BH13_0.9 | 14-Jan-2019 | 01-Feb-2019 | 21-Jan-2019 | ✖ | 01-Feb-2019 | 21-Jan-2019 | ✖ |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EG005C: Leachable Metals by ICPAES | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Unfiltered (EG005C)
CPT045_MW05_080119_1.0,
CPT001_BH109_140119_0.5,
CPT001_BH108_140119_0.4,
CPT061_BH22_160119_1.5 | CPT040B_MW04_080119_0.5,
CPT001_BH108_140119_0.0,
CPT032_BH11_140119_1.5, | 01-Feb-2019 | 05-Feb-2019 | 31-Jul-2019 | ✔ | 05-Feb-2019 | 31-Jul-2019 | ✔ |
| EG050C: Hexvalent Chromium - Leachable | | | | | | | | |
| Clear Plastic Bottle - NaOH (EG050C)
CPT000_MW02_100119_1.0 | | 01-Feb-2019 | ---- | ---- | ---- | 04-Feb-2019 | 01-Mar-2019 | ✔ |
| EK040P: Fluoride by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
CPT051A_BH18_0.5 | | 01-Feb-2019 | ---- | ---- | ---- | 05-Feb-2019 | 01-Mar-2019 | ✔ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
CPT001_BH108_140119_0.0, | CPT002_BH101_0.0 | 01-Feb-2019 | 04-Feb-2019 | 08-Feb-2019 | ✔ | 05-Feb-2019 | 16-Mar-2019 | ✔ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 3 | 33.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 1 | 100.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 1 | 1 | 100.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 1 | 100.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 4 | 25.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 5 | 20.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 1 | 100.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 7 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 3 | 66.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 5 | 20.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 0 | 1 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 0 | 1 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Matrix Spikes (MS) - Continued | | | | | | | |
| Total Fluoride | EK040T | 1 | 5 | 20.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 0 | 1 | 0.00 | 5.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 7 | 14.29 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Fluoride by PC Titrator | EK040P | 0 | 1 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Leachable | EG050C | 1 | 1 | 100.00 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Leachable Metals by ICPAES | EG005C | 2 | 13 | 15.38 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 9 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Fluoride by PC Titrator | EK040P | 1 | 1 | 100.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Leachable | EG050C | 1 | 1 | 100.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Leachable Metals by ICPAES | EG005C | 1 | 13 | 7.69 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 9 | 11.11 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Fluoride by PC Titrator | EK040P | 1 | 1 | 100.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Leachable | EG050C | 1 | 1 | 100.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Leachable Metals by ICPAES | EG005C | 1 | 13 | 7.69 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 9 | 11.11 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Fluoride by PC Titrator | EK040P | 0 | 1 | 0.00 | 5.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Leachable | EG050C | 0 | 1 | 0.00 | 5.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Leachable Metals by ICPAES | EG005C | 1 | 13 | 7.69 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 9 | 0.00 | 5.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|---------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Leachable Metals by ICPAES | EG005C | SOIL | In house: referenced to APHA 3120; USEPA SW 846 - 6010: The ICPAES technique ionises leachate sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Leachable | EG050C | SOIL | In house: Referenced to APHA 3500 Cr-B. Hexavalent chromium is determined directly on leachate samples as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (|
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | SOIL | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |



| Analytical Methods | Method | Matrix | Method Descriptions |
|--|--------------|--------|---|
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | SOIL | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| Preparation Methods | Method | Matrix | Method Descriptions |
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Digestion for Total Recoverable Metals in TCLP Leachate | EN25C | SOIL | In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3) |
| ASLP for Non & Semivolatile Analytes | EN60a | SOIL | In house QWI-EN/60 referenced to AS4439.3 Preparation of Leachates |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Separatory Funnel Extraction of Liquids | ORG14 | SOIL | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |

Page : 11 of 11
Work Order : EM1901269
Client : AECOM Australia Pty Ltd
Project : 60592634



| Preparation Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|--|
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |

Environmental Division
Melbourne
Work Order Reference
EM1901685

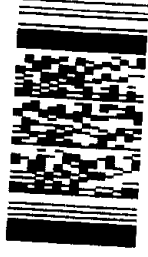
CS Contact:
Additional Information:

Date /time sample rec: Monday, 14 January 2019

Due date: Standard

Due date surcharge:

MS: 459
π 8-2



Telephone : + 61-3-8549 9600

MEFM (47/3)

From: [REDACTED]@aecom.com>
Sent: Thursday, 7 February 2019 7:45 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: RESULTS & EDD for ALS Workorder : EM1901269 | Overall Description: Rebatch of EM1900131, EM1900257, EM1900402, EM1900529 and EM1900531 (GIJPP Groundwater Study)

Follow Up Flag: Follow up
Flag Status: Flagged

Hi [REDACTED]

Can you please arrange for fluoride leachate analysis (ASLP) for CPT039_BH13_0.9? Thanks.

[REDACTED]
Senior Environmental Engineer
[REDACTED]
[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

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From: angel-no-reply@alsglobal.com [mailto:angel-no-reply@alsglobal.com]
Sent: Wednesday, 6 February 2019 9:12 AM
To: [REDACTED]
Subject: RESULTS & EDD for ALS Workorder : EM1901269 | Overall Description: Rebatch of EM1900131, EM1900257, EM1900402, EM1900529 and EM1900531 (GIJPP Groundwater Study)



Deliverables for ALS Workorder EM1901269

Project: 60592634

**Overall Description: Rebatch of EM1900131,
EM1900257, EM1900402, EM1900529 and EM1900531
(GIJPP Groundwater Study)**

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1901685**

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 3 |
| Order number | : 60592634 | Quote number | : EP2016AECOMAU0014 (EN/096/18) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : ---- | | |
| Sampler | : | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 08-Jan-2019 17:10 | Issue Date | : 08-Feb-2019 |
| Client Requested Due Date | : 14-Feb-2019 | Scheduled Reporting Date | : 14-Feb-2019 |

Delivery Details

| | | | |
|----------------------|-------------------|------------------------------------|-----------------|
| Mode of Delivery | : Samples On Hand | Security Seal | : Not Available |
| No. of coolers/boxes | : ---- | Temperature | : ---- |
| Receipt Detail | : | No. of samples received / analysed | : 1 / 1 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **This is a rebatch of EM1901269.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

☐ **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | SOIL - EK040-P Fluoride (PCT) | SOIL - EN60a ASLP Leachate Procedure |
|----------------------|-----------------------------|------------------|-------------------------------|--------------------------------------|
| EM1901685-001 | 14-Jan-2019 00:00 | CPT039_BH13_0.9 | ☐ | ☐ |

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.



Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

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- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
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- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

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CERTIFICATE OF ANALYSIS

Work Order : **EM1901685**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number : 60592634
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : EN/096/18
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 4
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 08-Jan-2019 17:10
Date Analysis Commenced : 08-Feb-2019
Issue Date : 13-Feb-2019 13:07



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| Signatories | Position | Accreditation Category |
|--|--------------------------|---------------------------------------|
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- This is a rebatch of EM1901269.



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| | | | | | | | | | |
|--|------------|-----|------|-----------------------------|-------------------|-------|-------|-------|-------|
| Sub-Matrix: ASLP LEACHATE
(Matrix: WATER) | | | | Client sample ID | CPT039_BH13_0.9 | ---- | ---- | ---- | ---- |
| | | | | Client sampling date / time | 14-Jan-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1901685-001 | ----- | ----- | ----- | ----- |
| | | | | Result | | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |



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| | | | | | | | | | |
|------------------------------------|------------|-----|---------|-----------------------------|-------------------|-------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT039_BH13_0.9 | ---- | ---- | ---- | ---- |
| | | | | Client sampling date / time | 14-Jan-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1901685-001 | ----- | ----- | ----- | ----- |
| | | | | Result | ---- | ---- | ---- | ---- | ---- |
| EN60: ASLP Leaching Procedure | | | | | | | | | |
| Initial pH | ---- | 0.1 | pH Unit | | 6.0 | ---- | ---- | ---- | ---- |
| After HCl pH | ---- | 0.1 | pH Unit | | 1.4 | ---- | ---- | ---- | ---- |
| Extraction Fluid pH | ---- | 0.1 | pH Unit | | 5.0 | ---- | ---- | ---- | ---- |
| Final pH | ---- | 0.1 | pH Unit | | 5.0 | ---- | ---- | ---- | ---- |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1901685 | Page | : 1 of 3 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : Peter Ravlic |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 08-Jan-2019 |
| Order number | : 60592634 | Date Analysis Commenced | : 08-Feb-2019 |
| C-O-C number | : ---- | Issue Date | : 13-Feb-2019 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 1 | | |
| No. of samples analysed | : 1 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□□□ □□ □□

Dilani Fernando

□□□□□□

Senior Inorganic Chemist

□□□ □□□ □□□ □□□ □

Melbourne Inorganics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EK040P: Fluoride by PC Titrator (QC Lot: 2179958) | | | | | | | | | |
| EM1901669-003 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM1901721-006 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.2 | 0.1 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|--------------------|---------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | | | Result | LCS | Low |
| EK040P: Fluoride by PC Titrator (QCLot: 2179958) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 99.4 | 87 | 117 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EK040P: Fluoride by PC Titrator (QCLot: 2179958) | | | | | | | |
| EM1901669-081 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 98.8 | 70 | 130 |

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|---------------------------|-------------------------|------------------------------------|
| Work Order | : EM1901685 | Page | : 1 of 4 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 08-Jan-2019 |
| Site | : ---- | Issue Date | : 13-Feb-2019 |
| Sampler | : ---- | No. of samples received | : 1 |
| Order number | : 60592634 | No. of samples analysed | : 1 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EN60: ASLP Leaching Procedure | | | | | | | |
| Non-Volatile Leach: 28 day HT(e.g. Hg, CrVI) (EN60a)
CPT039 BH13 0.9 | 14-Jan-2019 | 08-Feb-2019 | 11-Feb-2019 | ✔ | ---- | ---- | ---- |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
CPT039 BH13 0.9 | 08-Feb-2019 | ---- | ---- | ---- | 12-Feb-2019 | 08-Mar-2019 | ✔ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|----------------------------------|--------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Fluoride by PC Titrator | EK040P | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Fluoride by PC Titrator | EK040P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

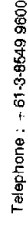
The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|-------------------------|--------|--------|---|
| Fluoride by PC Titrator | EK040P | SOIL | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |

| Preparation Methods | Method | Matrix | Method Descriptions |
|--------------------------------------|--------|--------|--|
| ASLP for Non & Semivolatile Analytes | EN60a | SOIL | In house QWI-EN/60 referenced to AS4439.3 Preparation of Leachates |

Environmental Division
Melbourne
Work Order Reference
EM1901699

CS Contact:
Additional Information:

MEFM (47/3)

From: [REDACTED]@aecom.com>
Sent: Thursday, 7 February 2019 2:23 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: GJPP EES - PFAS leachate analysis

Follow Up Flag: Follow up
Flag Status: Flagged

Hi [REDACTED]

Can you please arrange for the following samples to be analysed for PFAS leachate analysis? The objective is to compare the results against the PFAS NEPM landfill acceptance criteria (shown below). Can you also please confirm that the LOR is lower than the criteria specified? Thanks!

Table 5: Landfill acceptance criteria

| Landfill type | | Interim landfill acceptance criteria ¹ | | Comments |
|----------------------------|------------------------------------|---|-----------|---|
| | | PFOS + PFHxS | PFOA | |
| Unlined | ASLP leachate concentration (µg/L) | 0.07 µg/L | 0.56 µg/L | Drinking water x 1
(Australian Government Department of Health 2017) |
| | Total concentration (mg/kg) | 20 mg/kg | 50 mg/kg | Soil - Human health industrial/commercial x1
Total concentration for PFOA of 50 mg/kg (based on the low content limit) |
| Clay/angle composite lined | ASLP leachate concentration (µg/L) | 0.7 µg/L | 5.6 µg/L | Drinking water x 10
(Australian Government Department of Health 2017) |
| | Total concentration (mg/kg) | 50 mg/kg | 50 mg/kg | Soil - Human health industrial/commercial x10
Total concentration for PFOS + PFHxS and PFOA of 50 mg/kg (low content limit) |
| Double composite lined | ASLP leachate concentration (µg/L) | 7 µg/L | 56 µg/L | Drinking water x 100
(Australian Government Department of Health 2017) |
| | Total concentration (mg/kg) | 50 mg/kg | 50 mg/kg | Soil - Human health industrial/commercial x100
Total concentration for PFOS + PFHxS and PFOA of 50 mg/kg (low content limit) |

15/1

14/1

| ALS Report | EM1900531 | EM1900447 | EM1900402 |
|-----------------|----------------------|---------------------|------------------|
| AECOM Sample ID | CPT002_BH101_0.0 -1 | CPT002_BH102_0.0 -1 | CPT001_BH108_0.0 |
| | CPT002_BH101_0.5 -2 | CPT002_BH102_0.5 -2 | CPT001_BH108_0.4 |
| | CPT001_BH110 -13 | CPT002_BH102_1.5 -4 | CPT001_BH109_0.0 |
| | CPT001_BH110_0.5 -14 | QC151_151119 -19 | CPT001_BH109_0.5 |
| | CPT001_BH110_1.0 -15 | | |
| | CPT001_BH111_0.0 -7 | | |
| | CPT001_BH111_0.5 -8 | | |
| | CPT001_BH111_1.0 -9 | | |
| | QC152_160119 -20 | | |

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Regards,

Senior Environmental Engineer

[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1901699

| | |
|---|---|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : 60592634</p> <p>C-O-C number : ----</p> <p>Site : GIJPP</p> <p>Sampler :</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 3</p> <p>Quote number : EP2016AECOMAU0014 (EN/096/18)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|---|---|

Dates

| | |
|--|--|
| <p>Date Samples Received : 14-Jan-2019 17:30</p> <p>Client Requested Due : 14-Feb-2019</p> <p>Date :</p> | <p>Issue Date : 08-Feb-2019</p> <p>Scheduled Reporting Date : 14-Feb-2019</p> |
|--|--|

Delivery Details

| | |
|--|--|
| <p>Mode of Delivery : Samples On Hand</p> <p>No. of coolers/boxes : ----</p> <p>Receipt Detail :</p> | <p>Security Seal : Not Available</p> <p>Temperature : ----</p> <p>No. of samples received / analysed : 17 / 17</p> |
|--|--|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Sydney.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- This is a rebatch of EM1900402, EM1900447 and EM1900531.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

☐ **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | SOIL - EN60a ASLP Leachate Procedure | SOIL - EP231X PFAS - Full Suite (28 analytes) |
|----------------------|-----------------------------|------------------|--------------------------------------|---|
| EM1901699-001 | 14-Jan-2019 00:00 | CPT001_BH108_0.0 | ☐ | ☐ |
| EM1901699-002 | 14-Jan-2019 00:00 | CPT001_BH108_0.4 | ☐ | ☐ |
| EM1901699-003 | 14-Jan-2019 00:00 | CPT001_BH109_0.0 | ☐ | ☐ |
| EM1901699-004 | 14-Jan-2019 00:00 | CPT001_BH109_0.5 | ☐ | ☐ |
| EM1901699-005 | 15-Jan-2019 00:00 | CPT002_BH102_0.0 | ☐ | ☐ |
| EM1901699-006 | 15-Jan-2019 00:00 | CPT002_BH102_0.5 | ☐ | ☐ |
| EM1901699-007 | 15-Jan-2019 00:00 | CPT002_BH102_1.5 | ☐ | ☐ |
| EM1901699-008 | 15-Jan-2019 00:00 | QC151_151119 | ☐ | ☐ |
| EM1901699-009 | 16-Jan-2019 00:00 | CPT002_BH101_0.0 | ☐ | ☐ |
| EM1901699-010 | 16-Jan-2019 00:00 | CPT002_BH101_0.5 | ☐ | ☐ |
| EM1901699-011 | 16-Jan-2019 00:00 | CPT001_BH110 | ☐ | ☐ |
| EM1901699-012 | 16-Jan-2019 00:00 | CPT001_BH110_0.5 | ☐ | ☐ |
| EM1901699-013 | 16-Jan-2019 00:00 | CPT001_BH110_1.0 | ☐ | ☐ |
| EM1901699-014 | 16-Jan-2019 00:00 | CPT001_BH111_0.0 | ☐ | ☐ |
| EM1901699-015 | 16-Jan-2019 00:00 | CPT001_BH111_0.5 | ☐ | ☐ |
| EM1901699-016 | 16-Jan-2019 00:00 | CPT001_BH111_1.0 | ☐ | ☐ |
| EM1901699-017 | 16-Jan-2019 00:00 | QC152_160119 | ☐ | ☐ |

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.



Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

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- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
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- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
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- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
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- Chain of Custody (CoC) (COC)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

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CERTIFICATE OF ANALYSIS

Work Order : **EM1901699**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number : 60592634
C-O-C number : ----
Sampler : ----
Site : GIJPP
Quote number : EN/096/18
No. of samples received : 17
No. of samples analysed : 17

Page : 1 of 15
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 14-Jan-2019 17:30
Date Analysis Commenced : 11-Feb-2019
Issue Date : 15-Feb-2019 17:28



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|-----------------|------------------------------------|
| [REDACTED] | Organic Chemist | Sydney Organics, Smithfield, NSW |
| [REDACTED] | Analyst | Sydney Inorganics, Smithfield, NSW |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- This is a rebatch of EM1900402, EM1900447 and EM1900531.



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Sub-Matrix: ASLP LEACHATE
 (Matrix: WATER)

Client sample ID

| | | | | CPT001_BH108_0.0 | CPT001_BH108_0.4 | CPT001_BH109_0.0 | CPT001_BH109_0.5 | CPT002_BH102_0.0 |
|--|------------|------|------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 15-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1901699-001 | EM1901699-002 | EM1901699-003 | EM1901699-004 | EM1901699-005 |
| | | | | Result | Result | Result | Result | Result |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |



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Sub-Matrix: ASLP LEACHATE
 (Matrix: WATER)

Client sample ID

| | | | | CPT001_BH108_0.0 | CPT001_BH108_0.4 | CPT001_BH109_0.0 | CPT001_BH109_0.5 | CPT002_BH102_0.0 |
|---|--------------------|------|------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 15-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1901699-001 | EM1901699-002 | EM1901699-003 | EM1901699-004 | EM1901699-005 |
| | | | | Result | Result | Result | Result | Result |
| EP231C: Perfluoroalkyl Sulfonamides - Continued | | | | | | | | |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| EP231P: PFAS Sums | | | | | | | | |
| Sum of PFAS | ---- | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Sum of PFAS (WA DER List) | ---- | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP231S: PFAS Surrogate | | | | | | | | |
| 13C4-PFOS | ---- | 0.02 | % | 103 | 97.5 | 102 | 111 | 99.3 |
| 13C8-PFOA | ---- | 0.02 | % | 86.7 | 79.2 | 85.3 | 94.1 | 82.2 |



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Sub-Matrix: ASLP LEACHATE
 (Matrix: WATER)

Client sample ID

| | | | | CPT002_BH102_0.5 | CPT002_BH102_1.5 | QC151_151119 | CPT002_BH101_0.0 | CPT002_BH101_0.5 |
|--|------------|------|------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1901699-006 | EM1901699-007 | EM1901699-008 | EM1901699-009 | EM1901699-010 |
| | | | | Result | Result | Result | Result | Result |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |



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| Sub-Matrix: ASLP LEACHATE
(Matrix: WATER) | | | | Client sample ID | CPT002_BH102_0.5 | CPT002_BH102_1.5 | QC151_151119 | CPT002_BH101_0.0 | CPT002_BH101_0.5 |
|---|--------------------|------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1901699-006 | EM1901699-007 | EM1901699-008 | EM1901699-009 | EM1901699-010 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP231C: Perfluoroalkyl Sulfonamides - Continued | | | | | | | | | |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Sum of PFAS (WA DER List) | ---- | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.02 | % | 105 | 106 | 98.7 | 103 | 100 | |
| 13C8-PFOA | ---- | 0.02 | % | 83.6 | 83.2 | 81.1 | 81.3 | 78.9 | |



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| Sub-Matrix: ASLP LEACHATE
(Matrix: WATER) | | | | Client sample ID | CPT001_BH110 | CPT001_BH110_0.5 | CPT001_BH110_1.0 | CPT001_BH111_0.0 | CPT001_BH111_0.5 |
|--|------------|------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1901699-011 | EM1901699-012 | EM1901699-013 | EM1901699-014 | EM1901699-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |



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Sub-Matrix: ASLP LEACHATE
 (Matrix: WATER)

Client sample ID

| | | | | CPT001_BH110 | CPT001_BH110_0.5 | CPT001_BH110_1.0 | CPT001_BH111_0.0 | CPT001_BH111_0.5 |
|---|--------------------|------|------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1901699-011 | EM1901699-012 | EM1901699-013 | EM1901699-014 | EM1901699-015 |
| | | | | Result | Result | Result | Result | Result |
| EP231C: Perfluoroalkyl Sulfonamides - Continued | | | | | | | | |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| EP231P: PFAS Sums | | | | | | | | |
| Sum of PFAS | ---- | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Sum of PFAS (WA DER List) | ---- | 0.01 | µg/L | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP231S: PFAS Surrogate | | | | | | | | |
| 13C4-PFOS | ---- | 0.02 | % | 103 | 100 | 90.7 | 90.8 | 86.4 |
| 13C8-PFOA | ---- | 0.02 | % | 78.5 | 77.8 | 98.3 | 101 | 97.5 |



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Sub-Matrix: ASLP LEACHATE
 (Matrix: WATER)

Client sample ID

CPT001_BH111_1.0

QC152_160119

Client sampling date / time

16-Jan-2019 00:00

16-Jan-2019 00:00

Compound

CAS Number

LOR

Unit

EM1901699-016

EM1901699-017

Result

Result

EP231A: Perfluoroalkyl Sulfonic Acids

| | | | | | | | | |
|--|-----------|------|------|-------|-------|------|------|------|
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | ---- | ---- | ---- |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |

EP231B: Perfluoroalkyl Carboxylic Acids

| | | | | | | | | |
|--------------------------------------|------------|------|------|-------|-------|------|------|------|
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | <0.1 | ---- | ---- | ---- |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | <0.01 | ---- | ---- | ---- |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | <0.05 | ---- | ---- | ---- |

EP231C: Perfluoroalkyl Sulfonamides

| | | | | | | | | |
|---|------------|------|------|-------|-------|------|------|------|
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | <0.05 | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | <0.05 | ---- | ---- | ---- |



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| | | | | | | | | | |
|---|--------------------|------|------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: ASLP LEACHATE
(Matrix: WATER) | | | | Client sample ID | CPT001_BH111_1.0 | QC152_160119 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1901699-016 | EM1901699-017 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP231C: Perfluoroalkyl Sulfonamides - Continued | | | | | | | | | |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | | <0.05 | <0.05 | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | | <0.05 | <0.05 | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | | <0.02 | <0.02 | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | | <0.02 | <0.02 | ---- | ---- | ---- |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | | <0.05 | <0.05 | ---- | ---- | ---- |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | | <0.05 | <0.05 | ---- | ---- | ---- |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | | <0.05 | <0.05 | ---- | ---- | ---- |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | | <0.05 | <0.05 | ---- | ---- | ---- |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.01 | µg/L | | <0.01 | <0.01 | ---- | ---- | ---- |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.01 | µg/L | | <0.01 | <0.01 | ---- | ---- | ---- |
| Sum of PFAS (WA DER List) | ---- | 0.01 | µg/L | | <0.01 | <0.01 | ---- | ---- | ---- |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.02 | % | | 84.9 | 85.6 | ---- | ---- | ---- |
| 13C8-PFOA | ---- | 0.02 | % | | 94.4 | 102 | ---- | ---- | ---- |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT001_BH108_0.0 | CPT001_BH108_0.4 | CPT001_BH109_0.0 | CPT001_BH109_0.5 | CPT002_BH102_0.0 |
|--------------------------------------|------------|-----|---------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 14-Jan-2019 00:00 | 15-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1901699-001 | EM1901699-002 | EM1901699-003 | EM1901699-004 | EM1901699-005 |
| | | | | Result | Result | Result | Result | Result |
| EN60: ASLP Leaching Procedure | | | | | | | | |
| Initial pH | ---- | 0.1 | pH Unit | 7.6 | 6.3 | 6.9 | 8.6 | 6.1 |
| After HCl pH | ---- | 0.1 | pH Unit | 1.3 | 1.3 | 1.3 | 1.4 | 1.3 |
| Extraction Fluid pH | ---- | 0.1 | pH Unit | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 |
| Final pH | ---- | 0.1 | pH Unit | 4.9 | 4.9 | 5.1 | 6.2 | 4.9 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT002_BH102_0.5 | CPT002_BH102_1.5 | QC151_151119 | CPT002_BH101_0.0 | CPT002_BH101_0.5 |
|--------------------------------------|------------|-----|---------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 15-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1901699-006 | EM1901699-007 | EM1901699-008 | EM1901699-009 | EM1901699-010 |
| | | | | Result | Result | Result | Result | Result |
| EN60: ASLP Leaching Procedure | | | | | | | | |
| Initial pH | ---- | 0.1 | pH Unit | 5.6 | 5.1 | 5.1 | 6.0 | 6.2 |
| After HCl pH | ---- | 0.1 | pH Unit | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| Extraction Fluid pH | ---- | 0.1 | pH Unit | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 |
| Final pH | ---- | 0.1 | pH Unit | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT001_BH110 | CPT001_BH110_0.5 | CPT001_BH110_1.0 | CPT001_BH111_0.0 | CPT001_BH111_0.5 |
|--------------------------------------|------------|-----|---------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1901699-011 | EM1901699-012 | EM1901699-013 | EM1901699-014 | EM1901699-015 |
| | | | | Result | Result | Result | Result | Result |
| EN60: ASLP Leaching Procedure | | | | | | | | |
| Initial pH | ---- | 0.1 | pH Unit | 6.1 | 6.0 | 6.8 | 5.6 | 5.5 |
| After HCl pH | ---- | 0.1 | pH Unit | 1.3 | 1.3 | 1.5 | 1.5 | 1.5 |
| Extraction Fluid pH | ---- | 0.1 | pH Unit | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 |
| Final pH | ---- | 0.1 | pH Unit | 4.9 | 4.9 | 5.0 | 5.0 | 4.9 |



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| | | | | | | | | | |
|------------------------------------|------------|-----|---------|-----------------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT001_BH111_1.0 | QC152_160119 | ---- | ---- | ---- |
| | | | | Client sampling date / time | 16-Jan-2019 00:00 | 16-Jan-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1901699-016 | EM1901699-017 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EN60: ASLP Leaching Procedure | | | | | | | | | |
| Initial pH | ---- | 0.1 | pH Unit | | 5.6 | 5.6 | ---- | ---- | ---- |
| After HCl pH | ---- | 0.1 | pH Unit | | 1.5 | 1.5 | ---- | ---- | ---- |
| Extraction Fluid pH | ---- | 0.1 | pH Unit | | 4.9 | 4.9 | ---- | ---- | ---- |
| Final pH | ---- | 0.1 | pH Unit | | 5.0 | 5.0 | ---- | ---- | ---- |

Sub-Matrix: ASLP LEACHATE

| Sub-Matrix: ASLP LEACHATE | | | |
|----------------------------------|-------------------|----|-----|
| <i>Compound</i> | <i>CAS Number</i> | % | |
| EP231S: PFAS Surrogate | | | |
| 13C4-PFOS | ---- | 60 | 120 |
| 13C8-PFOA | ---- | 60 | 120 |

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|---------------------------|-------------------------|------------------------------------|
| Work Order | : EM1901699 | Page | : 1 of 6 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 14-Jan-2019 |
| Site | : GIJPP | Issue Date | : 15-Feb-2019 |
| Sampler | : ---- | No. of samples received | : 17 |
| Order number | : 60592634 | No. of samples analysed | : 17 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EN60: ASLP Leaching Procedure | | | | | | | |
| Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN60a)
CPT001_BH108_0.0, CPT001_BH108_0.4,
CPT001_BH109_0.0, CPT001_BH109_0.5 | 14-Jan-2019 | 11-Feb-2019 | 13-Jul-2019 | ✔ | ---- | ---- | ---- |
| Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN60a)
CPT002_BH102_0.0, CPT002_BH102_0.5,
CPT002_BH102_1.5, QC151_151119 | 15-Jan-2019 | 11-Feb-2019 | 14-Jul-2019 | ✔ | ---- | ---- | ---- |
| Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN60a)
CPT002_BH101_0.0, CPT002_BH101_0.5,
CPT001_BH110, CPT001_BH110_0.5 | 16-Jan-2019 | 11-Feb-2019 | 15-Jul-2019 | ✔ | ---- | ---- | ---- |
| Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN60a)
CPT001_BH110_1.0, CPT001_BH111_0.0,
CPT001_BH111_0.5, CPT001_BH111_1.0,
QC152_160119 | 16-Jan-2019 | 13-Feb-2019 | 15-Jul-2019 | ✔ | ---- | ---- | ---- |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|---|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X)
CPT001_BH108_0.0,
CPT001_BH109_0.0,
CPT002_BH102_0.0,
CPT002_BH102_1.5,
CPT002_BH101_0.0,
CPT001_BH110, | CPT001_BH108_0.4,
CPT001_BH109_0.5,
CPT002_BH102_0.5,
QC151_151119,
CPT002_BH101_0.5,
CPT001_BH110_0.5 | 11-Feb-2019 | 12-Feb-2019 | 10-Aug-2019 | ✔ | 12-Feb-2019 | 10-Aug-2019 | ✔ |
| HDPE (no PTFE) (EP231X)
CPT001_BH110_1.0,
CPT001_BH111_0.5,
QC152_160119 | CPT001_BH111_0.0,
CPT001_BH111_1.0, | 13-Feb-2019 | 14-Feb-2019 | 12-Aug-2019 | ✔ | 14-Feb-2019 | 12-Aug-2019 | ✔ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | | Analysis | | |
|---|---|-------------|--------------------------|--------------------|------------|--|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | | Date analysed | Due for analysis | Evaluation |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| HDPE (no PTFE) (EP231X)
CPT001_BH108_0.0,
CPT001_BH109_0.0,
CPT002_BH102_0.0,
CPT002_BH102_1.5,
CPT002_BH101_0.0,
CPT001_BH110, | CPT001_BH108_0.4,
CPT001_BH109_0.5,
CPT002_BH102_0.5,
QC151_151119,
CPT002_BH101_0.5,
CPT001_BH110_0.5 | 11-Feb-2019 | 12-Feb-2019 | 10-Aug-2019 | ✔ | | 12-Feb-2019 | 10-Aug-2019 | ✔ |
| HDPE (no PTFE) (EP231X)
CPT001_BH110_1.0,
CPT001_BH111_0.5,
QC152_160119 | CPT001_BH111_0.0,
CPT001_BH111_1.0, | 13-Feb-2019 | 14-Feb-2019 | 12-Aug-2019 | ✔ | | 14-Feb-2019 | 12-Aug-2019 | ✔ |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| HDPE (no PTFE) (EP231X)
CPT001_BH108_0.0,
CPT001_BH109_0.0,
CPT002_BH102_0.0,
CPT002_BH102_1.5,
CPT002_BH101_0.0,
CPT001_BH110, | CPT001_BH108_0.4,
CPT001_BH109_0.5,
CPT002_BH102_0.5,
QC151_151119,
CPT002_BH101_0.5,
CPT001_BH110_0.5 | 11-Feb-2019 | 12-Feb-2019 | 10-Aug-2019 | ✔ | | 12-Feb-2019 | 10-Aug-2019 | ✔ |
| HDPE (no PTFE) (EP231X)
CPT001_BH110_1.0,
CPT001_BH111_0.5,
QC152_160119 | CPT001_BH111_0.0,
CPT001_BH111_1.0, | 13-Feb-2019 | 14-Feb-2019 | 12-Aug-2019 | ✔ | | 14-Feb-2019 | 12-Aug-2019 | ✔ |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| HDPE (no PTFE) (EP231X)
CPT001_BH108_0.0,
CPT001_BH109_0.0,
CPT002_BH102_0.0,
CPT002_BH102_1.5,
CPT002_BH101_0.0,
CPT001_BH110, | CPT001_BH108_0.4,
CPT001_BH109_0.5,
CPT002_BH102_0.5,
QC151_151119,
CPT002_BH101_0.5,
CPT001_BH110_0.5 | 11-Feb-2019 | 12-Feb-2019 | 10-Aug-2019 | ✔ | | 12-Feb-2019 | 10-Aug-2019 | ✔ |
| HDPE (no PTFE) (EP231X)
CPT001_BH110_1.0,
CPT001_BH111_0.5,
QC152_160119 | CPT001_BH111_0.0,
CPT001_BH111_1.0, | 13-Feb-2019 | 14-Feb-2019 | 12-Aug-2019 | ✔ | | 14-Feb-2019 | 12-Aug-2019 | ✔ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--------------------------------------|--------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Reaular | Actual | Expected | Evaluation | |
| Method Blanks (MB) | | | | | | | |
| ASLP for Non & Semivolatile Analytes | EN60a | 3 | 28 | 10.71 | 9.09 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|--------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Reaular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 3 | 22 | 13.64 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 2 | 22 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 2 | 22 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 2 | 22 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|--|----------|--------|--|
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | SOIL | In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1 |
| Preparation Methods | Method | Matrix | Method Descriptions |
| ASLP for Non & Semivolatile Analytes | EN60a | SOIL | In house QWI-EN/60 referenced to AS4439.3 Preparation of Leachates |
| Preparation for PFAS in water. | EP231-PR | SOIL | Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis. |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1901699 | Page | : 1 of 10 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 14-Jan-2019 |
| Order number | : 60592634 | Date Analysis Commenced | : 11-Feb-2019 |
| C-O-C number | : ---- | Issue Date | : 15-Feb-2019 |
| Sampler | : ---- | | |
| Site | : GIJPP | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 17 | | |
| No. of samples analysed | : 17 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]

Organic Chemist
Analyst

Sydney Organics, Smithfield, NSW
Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2181052) | | | | | | | | | |
| EM1901699-001 | CPT001_BH108_0.0 | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| EM1901699-006 | CPT002_BH102_0.5 | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2185961) | | | | | | | | | |
| EM1901699-013 | CPT001_BH110_1.0 | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2181052) | | | | | | | | | |
| EM1901699-001 | CPT001_BH108_0.0 | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2181052) - continued | | | | | | | | | |
| EM1901699-001 | CPT001_BH108_0.0 | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM1901699-006 | CPT002_BH102_0.5 | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2185961) | | | | | | | | | |
| EM1901699-013 | CPT001_BH110_1.0 | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2181052) | | | | | | | | | |
| EM1901699-001 | CPT001_BH108_0.0 | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|-------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2181052) - continued | | | | | | | | | |
| EM1901699-001 | CPT001_BH108_0.0 | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EM1901699-006 | CPT002_BH102_0.5 | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2185961) | | | | | | | |
| EM1901699-013 | CPT001_BH110_1.0 | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2181052) | | | | | | | | | |
| EM1901699-001 | CPT001_BH108_0.0 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|-------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2181052) - continued | | | | | | | | | |
| EM1901699-006 | CPT002_BH102_0.5 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2185961) | | | | | | | | | |
| EM1901699-013 | CPT001_BH110_1.0 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EP231P: PFAS Sums (QC Lot: 2181052) | | | | | | | | | |
| EM1901699-001 | CPT001_BH108_0.0 | EP231X: Sum of PFAS | ---- | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1901699-006 | CPT002_BH102_0.5 | EP231X: Sum of PFAS | ---- | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EP231P: PFAS Sums (QC Lot: 2185961) | | | | | | | | | |
| EM1901699-013 | CPT001_BH110_1.0 | EP231X: Sum of PFAS | ---- | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|---------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | LCS | Low |
| EN60: ASLP Leaching Procedure (QCLot: 2177872) | | | | | | | | |
| EN60a: Final pH | ---- | 0.1 | pH Unit | 1.0 | ---- | ---- | ---- | ---- |
| EN60: ASLP Leaching Procedure (QCLot: 2177873) | | | | | | | | |
| EN60a: Final pH | ---- | 0.1 | pH Unit | 1.0 | ---- | ---- | ---- | ---- |
| EN60: ASLP Leaching Procedure (QCLot: 2182632) | | | | | | | | |
| EN60a: Final pH | ---- | 0.1 | pH Unit | 1.0 | ---- | ---- | ---- | ---- |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|------|-----------------------------|---------------------------------------|--------------------|---------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | LCS | Low |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2181052) | | | | | | | | |
| EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 76.8 | 70 | 130 |
| EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 77.2 | 70 | 130 |
| EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 75.8 | 70 | 130 |
| EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 84.8 | 70 | 130 |
| EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | 0.5 µg/L | 83.6 | 70 | 130 |
| EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 87.0 | 70 | 130 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2185961) | | | | | | | | |
| EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 83.2 | 70 | 130 |
| EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 84.4 | 70 | 130 |
| EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 76.4 | 70 | 130 |
| EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 98.0 | 70 | 130 |
| EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | 0.5 µg/L | 92.4 | 70 | 130 |
| EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 92.2 | 70 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2181052) | | | | | | | | |
| EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | 2.5 µg/L | 92.2 | 70 | 130 |
| EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 85.8 | 70 | 130 |
| EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 84.4 | 70 | 130 |
| EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 86.2 | 70 | 130 |
| EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | 0.5 µg/L | 84.0 | 70 | 130 |
| EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 87.4 | 70 | 130 |
| EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 78.6 | 70 | 130 |
| EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 83.8 | 70 | 130 |
| EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 81.8 | 70 | 130 |
| EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 81.6 | 70 | 130 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2181052) - continued | | | | | | | | |
| EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 90.9 | 70 | 150 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2185961) | | | | | | | | |
| EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | 2.5 µg/L | 91.3 | 70 | 130 |
| EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 92.2 | 70 | 130 |
| EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 84.0 | 70 | 130 |
| EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 88.8 | 70 | 130 |
| EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | 0.5 µg/L | 91.4 | 70 | 130 |
| EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 93.2 | 70 | 130 |
| EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 91.4 | 70 | 130 |
| EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 110 | 70 | 130 |
| EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 104 | 70 | 130 |
| EP231X: Perfluorotridecanoic acid (PFTriDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 101 | 70 | 130 |
| EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 100 | 70 | 150 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2181052) | | | | | | | | |
| EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 98.2 | 70 | 130 |
| EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 90.7 | 70 | 150 |
| EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 75.4 | 70 | 150 |
| EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 79.4 | 70 | 150 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 88.3 | 70 | 150 |
| EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 89.4 | 70 | 130 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 82.0 | 70 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2185961) | | | | | | | | |
| EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 84.2 | 70 | 130 |
| EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 100 | 70 | 150 |
| EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 106 | 70 | 150 |
| EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 80.5 | 70 | 150 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | 1.25 µg/L | 108 | 70 | 150 |
| EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 109 | 70 | 130 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | 0.5 µg/L | 105 | 70 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2181052) | | | | | | | | |
| EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | 0.5 µg/L | 90.2 | 70 | 130 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-------------|------|------|-----------------------------|---------------------------------------|---------------------------|--------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
LowHigh | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2181052) - continued | | | | | | | | |
| EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | 0.5 µg/L | 78.2 | 70 | 130 |
| EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | 0.5 µg/L | 98.4 | 70 | 130 |
| EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | 0.5 µg/L | 88.6 | 70 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2185961) | | | | | | | | |
| EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | 0.5 µg/L | 98.8 | 70 | 130 |
| EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | 0.5 µg/L | 84.4 | 70 | 130 |
| EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | 0.5 µg/L | 95.8 | 70 | 130 |
| EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | 0.5 µg/L | 94.6 | 70 | 130 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2181052) | | | | | | | |
| EM1901699-001 | CPT001_BH108_0.0 | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.5 µg/L | 73.4 | 50 | 130 |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.5 µg/L | 73.0 | 50 | 130 |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.5 µg/L | 69.0 | 50 | 130 |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.5 µg/L | 82.8 | 50 | 130 |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.5 µg/L | 77.8 | 50 | 130 |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.5 µg/L | 74.2 | 50 | 130 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2185961) | | | | | | | |
| EM1901699-013 | CPT001_BH110_1.0 | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.5 µg/L | 109 | 50 | 130 |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.5 µg/L | 79.6 | 50 | 130 |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.5 µg/L | 71.8 | 50 | 130 |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.5 µg/L | 96.6 | 50 | 130 |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.5 µg/L | 90.8 | 50 | 130 |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.5 µg/L | 99.8 | 50 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2181052) | | | | | | | |
| EM1901699-001 | CPT001_BH108_0.0 | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 2.5 µg/L | 65.8 | 50 | 130 |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.5 µg/L | 76.6 | 50 | 130 |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.5 µg/L | 78.8 | 50 | 130 |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.5 µg/L | 82.8 | 50 | 130 |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.5 µg/L | 75.4 | 50 | 130 |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.5 µg/L | 76.0 | 50 | 130 |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.5 µg/L | 68.2 | 50 | 130 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2181052) - continued | | | | | | | |
| EM1901699-001 | CPT001_BH108_0.0 | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.5 µg/L | 75.4 | 50 | 130 |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.5 µg/L | 75.0 | 50 | 130 |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.5 µg/L | 69.6 | 50 | 130 |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 1.25 µg/L | 82.7 | 50 | 150 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2185961) | | | | | | | |
| EM1901699-013 | CPT001_BH110_1.0 | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 2.5 µg/L | 68.9 | 50 | 130 |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.5 µg/L | 101 | 50 | 130 |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.5 µg/L | 92.8 | 50 | 130 |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.5 µg/L | 91.2 | 50 | 130 |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.5 µg/L | 97.6 | 50 | 130 |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.5 µg/L | 102 | 50 | 130 |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.5 µg/L | 96.2 | 50 | 130 |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.5 µg/L | 113 | 50 | 130 |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.5 µg/L | 107 | 50 | 130 |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.5 µg/L | 97.2 | 50 | 130 |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 1.25 µg/L | 110 | 50 | 150 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2181052) | | | | | | | |
| EM1901699-001 | CPT001_BH108_0.0 | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.5 µg/L | 99.4 | 50 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 1.25 µg/L | 79.4 | 50 | 150 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 1.25 µg/L | 68.2 | 50 | 150 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 1.25 µg/L | 74.6 | 50 | 150 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 1.25 µg/L | 72.7 | 50 | 150 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.5 µg/L | 78.2 | 50 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.5 µg/L | 72.0 | 50 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2185961) | | | | | | | |
| EM1901699-013 | CPT001_BH110_1.0 | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.5 µg/L | 86.2 | 50 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 1.25 µg/L | 104 | 50 | 150 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 1.25 µg/L | 117 | 50 | 150 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 1.25 µg/L | 88.3 | 50 | 150 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 1.25 µg/L | 107 | 50 | 150 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|-------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2185961) - continued | | | | | | | |
| EM1901699-013 | CPT001_BH110_1.0 | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.5 µg/L | 106 | 50 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.5 µg/L | 102 | 50 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2181052) | | | | | | | |
| EM1901699-001 | CPT001_BH108_0.0 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.5 µg/L | 83.8 | 50 | 130 |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.5 µg/L | 71.8 | 50 | 130 |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.5 µg/L | 84.2 | 50 | 130 |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.5 µg/L | 78.8 | 50 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2185961) | | | | | | | |
| EM1901699-013 | CPT001_BH110_1.0 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.5 µg/L | 118 | 50 | 130 |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.5 µg/L | 94.8 | 50 | 130 |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.5 µg/L | 103 | 50 | 130 |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.5 µg/L | 95.8 | 50 | 130 |

Client / Client code: AECOMAU
Project: 60592634, Gas Import Jetty Pipeline Project (GIJPP) EES
Project Manager: [REDACTED]
Date /time sample rec: 17/11/19 17:20
Date/time Instructions rec: 14/02/2019 12:47
Due date: Tuesday, 19 February 2019
Due date surcharge: 3 day TAT

12345

[illegible]

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1902070**

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 2 |
| Order number | : 60592634 | Quote number | : EP2016AECOMAU0014 (EN/096/18) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : Gas Import Jetty Pipeline Project
(GIJPP) EES | | |
| Sampler | : | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 17-Jan-2019 17:20 | Issue Date | : 15-Feb-2019 |
| Client Requested Due Date | : 19-Feb-2019 | Scheduled Reporting Date | : 19-Feb-2019 |

Delivery Details

| | | | |
|----------------------|-------------------|------------------------------------|-----------------|
| Mode of Delivery | : Samples On Hand | Security Seal | : Not Available |
| No. of coolers/boxes | : ---- | Temperature | : ---- |
| Receipt Detail | : | No. of samples received / analysed | : 1 / 1 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- This is a rebatch of EM1900681.

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- ### Summary of Sample(s) and Requested Analysis

SOIL - EP071-SVSG
 TTRH - Semivolatile Fractions Only (after Silica

[REDACTED]@aecom.com

CERTIFICATE OF ANALYSIS

Work Order : **EM1902070**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number : 60592634
C-O-C number : ----
Sampler : ----
Site : Gas Import Jetty Pipeline Project (GIJPP) EES
Quote number : EN/096/18
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 2
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 17-Jan-2019 17:20
Date Analysis Commenced : 22-Jan-2019
Issue Date : 18-Feb-2019 17:42



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| Signatories | Position | Accreditation Category |
|--|------------------------|-------------------------------------|
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 ^ = This result is computed from individual analyte detections at or above the level of reporting
 Ø = ALS is not NATA accredited for these tests.
 ~ = Indicates an estimated value.

- This is a rebatch of EM1900681.

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Sub-Matrix: **SOIL**
 (Matrix: **SOIL**)

Client sample ID

| | | | | | | | | |
|--|------------|-----|-------|------------------------|-------|-------|-------|-------|
| | | | | CPT098_BH36_0.0 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | 17-Jan-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1902070-001 | ----- | ----- | ----- | ----- |
| | | | | Result | ---- | ---- | ---- | ---- |
| EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup | | | | | | | | |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- |
| C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- |
| EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | ---- | ---- |
| >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1902070 | Page | : 1 of 3 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 17-Jan-2019 |
| Order number | : 60592634 | Date Analysis Commenced | : 22-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 18-Feb-2019 |
| Sampler | : ---- | | |
| Site | : Gas Import Jetty Pipeline Project (GIJPP) EES | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 1 | | |
| No. of samples analysed | : 1 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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□□□ □□□ □□ □□ □

[REDACTED]

Senior Organic Chemist

Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|-------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: <i>Compound</i> | CAS Number | LOR | Unit | Result | | | | |
| EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup (QCLot: 2187749) | | | | | | | | |
| EP071-SVSG: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 66.3 | 56 | 122 |
| EP071-SVSG: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 93.1 | 64 | 135 |
| EP071-SVSG: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 87.3 | 66 | 120 |
| EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup (QCLot: 2187749) | | | | | | | | |
| EP071-SVSG: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 72.8 | 62 | 118 |
| EP071-SVSG: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 89.6 | 67 | 126 |
| EP071-SVSG: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 69.8 | 49 | 128 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|---|-------------------------|------------------------------------|
| Work Order | : EM1902070 | Page | : 1 of 4 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 17-Jan-2019 |
| Site | : Gas Import Jetty Pipeline Project (GIJPP) EES | Issue Date | : 18-Feb-2019 |
| Sampler | : ---- | No. of samples received | : 1 |
| Order number | : 60592634 | No. of samples analysed | : 1 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|--|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| TRH - Semivolatile Fractions Only (after Silica Gel Cleanup) | 0 | 1 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| TRH - Semivolatile Fractions Only (after Silica Gel Cleanup) | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-SVSG)
CPT098_BH36_0.0 | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 15-Feb-2019 | 03-Mar-2019 | ✓ |
| EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-SVSG)
CPT098_BH36_0.0 | 17-Jan-2019 | 22-Jan-2019 | 31-Jan-2019 | ✓ | 15-Feb-2019 | 03-Mar-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| TRH - Semivolatile Fractions Only (after Silica Gel Cleanup) | EP071-SVSG | 0 | 1 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| TRH - Semivolatile Fractions Only (after Silica Gel Cleanup) | EP071-SVSG | 1 | 1 | 100.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| TRH - Semivolatile Fractions Only (after Silica Gel Cleanup) | EP071-SVSG | 1 | 1 | 100.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| TRH - Semivolatile Fractions Only (after Silica Gel Cleanup) | EP071-SVSG | 0 | 1 | 0.00 | 5.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|--|------------|--------|--|
| TRH - Semivolatile Fractions Only (after Silica Gel Cleanup) | EP071-SVSG | SOIL | In house: Referenced to USEPA SW 846 - 8015A. Sample extracts are cleaned up using silica gel and are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013. |

| Preparation Methods | Method | Matrix | Method Descriptions |
|------------------------------|--------|--------|--|
| Tumbler Extraction of Solids | ORG17 | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |

ANZ FQM - Generic Chain of Custody Form

| | | | | | | | |
|---|--|--|--|---|--|------------------------|--|
| CONSULTANT: AECOM Australia | | ADDRESS / OFFICE: Melbourne | | SAMPLER: [REDACTED] | | Destination Laboratory | |
| PROJECT MANAGER (PM): MW | | SITE: GLJPP | | MOBILE: [REDACTED] | | ALS | |
| PROJECT NUMBER & TASK: 60592634 / Task 10 | | P.O. NO.: [REDACTED] | | EMAIL REPORT TO: [REDACTED] @aecom.com | | @aecom.com | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | W-18 (C6-C9/BTEXN) | | | |
| COOLER SEAL (if appropriate) | | 2 extra | | W-28 (MNA - nitrate, sulfate, methane, ferrous) | | | |
| Intact: Yes | | N/A | | W-30 (Disinfectant) | | | |
| SAMPLE TEMPERATURE | | Please send QC201 - 23/1/19 to Envirofins | | W-14 (Major ions) | | | |
| CHILLED: Yes | | N6 | | NT-14 (Total ammonia) | | | |
| | | | | Total phosphorus | | | |
| | | | | W-23 (Full suite 28) | | | |
| | | | | PFAS (Low level) | | | |
| | | | | CR VI | | | |
| | | | | Notes: e.g. Highly contaminated sample e.g. "High PAHs expedited". Extra volume for QC or trace LORs etc. | | | |

| SAMPLE INFORMATION (note: S = Soil, W=Water) | | | | CONTAINER INFORMATION | | | |
|--|-----------------|----------------|---------|-----------------------|-----------------------|---------------|--|
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | MW03 - 23/1/19 | W | 23/1/19 | | P 2VS, 2AG, N, SP, SH | 8 | |
| 2 | MW02 - | | | | P 2VS, AG, N, SP, SH | 7 | |
| 3 | GW05 - | | | | " + PFAS | 8 | |
| 4 | QC101 - | | | | " + PFAS | 8 | |
| 5 | QC201 - | | | | " + PFAS | 8 | |
| 6 | MW10 - | CPT055 - MW 10 | 25/1 | | P 2VS, AG, N, SP, SH | 7 | |
| 7 | MW09 - | CPT057 - MW09 | | | " | 7 | |
| 8 | MW11 - | | | | " | 7 | |
| 9 | QC301 - | | | | " + PFAS | 8 | |
| 10 | QC302 - | | | | " | 7 | |
| 11 | QC401 - | | | | VS | 1 | |
| 12 | QC402 - | | | | VS | 1 | |
| 13 | QC304 - 24/1/19 | | 24/1/19 | | P 2VS, AG, N, SP, SH | 7 | |
| 14 | QC403 - 24/1/19 | | | | VS | 1 | |
| 15 | MW07 - 24/1/19 | | | | P 2VS, AG, N, SP, SH | 7 | |
| 16 | MW04 - 24/1/19 | | | | " | 7 | |
| 17 | GW04 - 24/1/19 | | | | " + PFAS | 8 | |
| 18 | MW07 - | | 24/1/19 | | | | |

| RELINQUISHED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
|------------------|---------|----------------|---------|--------------------|----------------|
| Name: | Date: | Name: | Date: | Cont' Note No.: | Transport Co.: |
| By: [REDACTED] | 24/1/19 | By: [REDACTED] | 24/1/19 | | |
| Of: | Time: | Of: | Time: | | |
| | | | | | |

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Plastic Jar

Environmental Division
Melbourne
Work Order Reference
EM1900976



Telephone : + 61-3-9549 9800

COC Page | of |

[REDACTED]

From: [REDACTED]
Sent: Friday, 25 January 2019 1:35 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: SRN for ALS Workorder : EM1900976 | Overall Description: GIJPP

Hi [REDACTED]

Sorry for the discrepancies, my list of COC fixes is below:

- The CPT## in front of the Location code for all bottles should be removed, can you please use the COC name for MW09 and MW10.
- EM1900976-015 is in fact GW04_24/1/19 and should be scheduled for ALL analysis including PFAS.

| Sample | Received Bottle Sample | Confirmed Sample No. | Scheduled analysis required |
|---------------|------------------------|----------------------|-----------------------------|
| EM1900976-017 | CPT040_MW07_24/1/19 | MW07_24/1/19 | All analysis |
| EM1900976-015 | MW07_24/1/19 | GW04_24/1/19 | All Analysis + PFAS |

Have a good weekend,

Thanks!

[REDACTED]
Environmental Scientist
D +61 3 9653 8014
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From: [REDACTED]@alsglobal.com>
Sent: Friday, 25 January 2019 12:40 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: SRN for ALS Workorder : EM1900976 | Overall Description: GIJPP

Hi [REDACTED]

This sample is yet to be sent to Eurofins but has been packed and will be delivered this afternoon

Also, some queries below:

Missing sample:
GW04_24/01/19

Extra sample:
CPT040_MW07_24/1/19

Id discrepancies:

| ALS ID | COC ID | Container Id |
|--------|--------------|---------------------|
| 005 | MW10_23/1/19 | CPT055_MW10_23/1/19 |
| 006 | MW09_23/1/19 | CPT051_MW09_23/1/19 |

Lab QC specified on sample#1, but received extra ambers for sample#2. For now sample#2 ambers have been allocated for Lab QC.

FYI, extra PFAS container received for sample#15 "MW07_24/1/19".

Thanks

Regards

[REDACTED]

Client Services – Springvale

Environmental



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Australia

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From: [REDACTED]@aecom.com]

Sent: Friday, 25 January 2019 11:46 AM

To: [REDACTED]@alsglobal.com>

Subject: FW: SRN for ALS Workorder : EM1900976 | Overall Description: GIJPP

Hi [REDACTED]

I note that sample QC201 does not appear on the SRN document. Can you please confirm that QC201 was received and forwarded to Eurofins (as per CoC).

Kind regards i

[REDACTED]

Associate Director – Hydrogeologist

FQM - Generic Chain of Custody Form

AECOM

Q4AN(EV)-007-FM1

| CONSULTANT: AECOM Australia | | ADDRESS / OFFICE: Melbourne | | SAMPLER: | | Destination Laboratory | |
|--|-----------------|--|---------|--|------------------------|--------------------------|--|
| PROJECT MANAGER (PM): MW | | SITE: GUYP | | MOBILE: | | ALS | |
| PROJECT NUMBER & TASK COI: 60592634 / Task 1-0 | | P.O. NO.: | | PHONE: | | | |
| RESULTS REQUIRED (Date): Standard-TAT | | QUOTE NO.: | | EMAIL REPORT TO: @aecom.com | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| COOLER SEAL (if appropriate) | | 2 eds | | W-18 (MNA - nitrate, sulfate, methane, ferrous) | | W-18 (C9/B/TEXN) | |
| SAMPLE TEMPERATURE | | N/A | | W-30 (Incl Mercury) | | W-30 (TR4 SVOC) | |
| CHILLED: No | | Please send QC201-23/1/19 to Envofans | | NT-14 (Major ions) | | NT-14 (Total Phosphorus) | |
| | | | | C-VI | | C-VI | |
| | | | | W-23 (Full suite 28) | | W-23 (Full suite 28) | |
| | | | | PFS (Low level) | | PFS (Low level) | |
| | | | | HOLD | | HOLD | |
| | | | | Extra Amber lab QC | | Extra Amber lab QC | |
| | | | | Please send to Envofans! | | Please send to Envofans! | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | MW03 - 23/1/19 | W | 23/1/19 | | P, 2VS, 2AG, N, SP, SH | 8 | |
| 2 | MW02 - | | | | P, 2VS, AG, N, SP, SH | 7 | |
| 3 | GW05 - | | | | " + PFS | 8 | |
| 4 | QC101 - | | | | " + PFS | 8 | |
| 5 | QC201 - | | | | " + PFS | 8 | |
| 6 | MW10 - | | | | P, 2VS, AG, N, SP, SH | 7 | |
| 7 | MW09 - | | | | " | 7 | |
| 8 | MW11 - | | | | " | 7 | |
| 9 | QC301 - | | | | " | 7 | |
| 10 | QC302 - | | | | " + PFS | 8 | |
| 11 | QC401 - | | | | " | 7 | |
| 12 | QC402 - | | | | VS | 1 | |
| 13 | QC304 - 24/1/19 | | 24/1/19 | | VS | 1 | |
| 14 | QC403 - 24/1/19 | | 24/1/19 | | P, 2VS, AG, N, SP, SH | 7 | |
| 15 | MW07 - 24/1/19 | | | | VS | 1 | |
| 16 | MW04 - 24/1/19 | | | | P, 2VS, AG, N, SP, SH | 7 | |
| 17 | GW04 - 24/1/19 | | | | " | 7 | |
| 18 | GW07 - 24/1/19 | | | | " + PFS | 8 | |
| 19 | CPT05 - MW10 | | | | | | |
| 20 | CPT05 - MW09 | | | | | | |
| 21 | CPT05 - MW07 | | | | | | |
| 22 | CPT05 - MW04 | | | | | | |
| 23 | CPT05 - MW03 | | | | | | |
| 24 | CPT05 - MW02 | | | | | | |
| 25 | CPT05 - MW01 | | | | | | |
| 26 | CPT05 - MW00 | | | | | | |
| 27 | CPT05 - MW00 | | | | | | |
| 28 | CPT05 - MW00 | | | | | | |
| 29 | CPT05 - MW00 | | | | | | |
| 30 | CPT05 - MW00 | | | | | | |
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| 99 | CPT05 - MW00 | | | | | | |
| 100 | CPT05 - MW00 | | | | | | |

Environmental Division
Melbourne
Work Order Reference
EM1900976



Telephone : + 61-3-8549 9800

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1900976

| | |
|---|--|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : 60592634 Task 1.0</p> <p>C-O-C number : ----</p> <p>Site : GIJPP</p> <p>Sampler : [REDACTED]</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia 3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 3</p> <p>Quote number : EB2017AECOMAU0014 (EN/004/16)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|---|--|

Dates

| | |
|---|--|
| <p>Date Samples Received : 24-Jan-2019 13:35</p> <p>Client Requested Due Date : 04-Feb-2019</p> | <p>Issue Date : 25-Jan-2019</p> <p>Scheduled Reporting Date : 04-Feb-2019</p> |
|---|--|

Delivery Details

| | |
|--|---|
| <p>Mode of Delivery : Client Drop Off</p> <p>No. of coolers/boxes : 3</p> <p>Receipt Detail :</p> | <p>Security Seal : Not Available</p> <p>Temperature : 10.0°C - Ice present</p> <p>No. of samples received / analysed : 17 / 17</p> |
|--|---|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale & ALS Sydney.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - EA015H
Total Dissolved Solids - Standard Level | WATER - EG050F
Dissolved Hexavalent Chromium | WATER - EP231X-LL
PFAS - Full Suite Low Level (29 analytes) | WATER - NT-14
Extended Water Suite B | WATER - W-04
TRH/BTEXN | WATER - W-23
SVOC/VOC | WATER - W-30
11 Metals |
|----------------------|-----------------------------|------------------|---|---|--|---|---------------------------|--------------------------|---------------------------|
| EM1900976-001 | 23-Jan-2019 00:00 | MW03_23/1/19 | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| EM1900976-002 | 23-Jan-2019 00:00 | MW02_23/1/19 | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| EM1900976-003 | 23-Jan-2019 00:00 | GW05_23/1/19 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| EM1900976-004 | 23-Jan-2019 00:00 | QC101_23/1/19 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| EM1900976-005 | 23-Jan-2019 00:00 | MW10_23/1/19 | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| EM1900976-006 | 23-Jan-2019 00:00 | MW09_23/1/19 | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| EM1900976-007 | 23-Jan-2019 00:00 | MW11_23/1/19 | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| EM1900976-008 | 23-Jan-2019 00:00 | MW15_23/1/19 | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| EM1900976-009 | 23-Jan-2019 00:00 | QC301_23/1/19 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| EM1900976-010 | 23-Jan-2019 00:00 | QC302_23/1/19 | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| EM1900976-013 | 24-Jan-2019 00:00 | QC304_24/1/19 | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| EM1900976-015 | 24-Jan-2019 00:00 | GW04_24/1/19 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| EM1900976-016 | 24-Jan-2019 00:00 | MW14_24/1/19 | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| EM1900976-017 | 24-Jan-2019 00:00 | MW07_24/1/19 | ✓ | ✓ | | ✓ | | ✓ | ✓ |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - W-18
TRH(C6 - C9)/BTEXN |
|----------------------|-----------------------------|------------------|------------------------------------|
| EM1900976-011 | 23-Jan-2019 00:00 | QC401_23/1/19 | ✓ |
| EM1900976-012 | 23-Jan-2019 00:00 | QC402_23/1/19 | ✓ |
| EM1900976-014 | 24-Jan-2019 00:00 | QC403_24/1/19 | ✓ |

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Issue Date : 25-Jan-2019
Page : 3 of 3
Work Order : EM1900976 Amendment 0
Client : AECOM Australia Pty Ltd



| Method | Client Sample ID(s) | Container | Due for extraction | Due for analysis | Samples Received | | Instructions Received | |
|----------------------------|--------------------------------|-----------|--------------------|------------------|------------------|------------|-----------------------|------------|
| | | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | | |
| GW05_23/1/19 | Clear Plastic Bottle - Natural | ---- | 23-Jan-2019 | 24-Jan-2019 | ✗ | ---- | ---- | |
| MW02_23/1/19 | Clear Plastic Bottle - Natural | ---- | 23-Jan-2019 | 24-Jan-2019 | ✗ | ---- | ---- | |
| MW03_23/1/19 | Clear Plastic Bottle - Natural | ---- | 23-Jan-2019 | 24-Jan-2019 | ✗ | ---- | ---- | |
| MW09_23/1/19 | Clear Plastic Bottle - Natural | ---- | 23-Jan-2019 | 24-Jan-2019 | ✗ | ---- | ---- | |
| MW10_23/1/19 | Clear Plastic Bottle - Natural | ---- | 23-Jan-2019 | 24-Jan-2019 | ✗ | ---- | ---- | |
| MW11_23/1/19 | Clear Plastic Bottle - Natural | ---- | 23-Jan-2019 | 24-Jan-2019 | ✗ | ---- | ---- | |
| MW15_23/1/19 | Clear Plastic Bottle - Natural | ---- | 23-Jan-2019 | 24-Jan-2019 | ✗ | ---- | ---- | |
| QC101_23/1/19 | Clear Plastic Bottle - Natural | ---- | 23-Jan-2019 | 24-Jan-2019 | ✗ | ---- | ---- | |
| QC301_23/1/19 | Clear Plastic Bottle - Natural | ---- | 23-Jan-2019 | 24-Jan-2019 | ✗ | ---- | ---- | |
| QC302_23/1/19 | Clear Plastic Bottle - Natural | ---- | 23-Jan-2019 | 24-Jan-2019 | ✗ | ---- | ---- | |

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

- Chain of Custody (CoC) (COC)

Email AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- Electronic SRN for EQUIS (ESRN_EQUIS)

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- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- Electronic SRN for EQUIS (ESRN_EQUIS)

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CERTIFICATE OF ANALYSIS

Work Order : **EM1900976**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number : 60592634 Task 1.0
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP
Quote number : EN/004/16
No. of samples received : 17
No. of samples analysed : 17

Page : 1 of 45
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 24-Jan-2019 13:35
Date Analysis Commenced : 24-Jan-2019
Issue Date : 05-Feb-2019 23:01



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| Signatories | Position | Accreditation Category |
|--|-------------------------------------|---------------------------------------|
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Metals Team Leader | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | | Sydney Organics, Smithfield, NSW |
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- TDS by method EA-015 may bias high for EM1900976 #6 and 17 due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EK040P: EM1900918 #2 Poor matrix spike recovery for Fluoride due to sample matrix. Confirmed by re-preparation and re-analysis.
- ED093F: EM1900976 #4, the results for Cations have been confirmed by re-preparation and re-analysis.
- EA010-P: Electrical Conductivity @ 25°C was analysed by manual method (EA010).
- ED041G, ED045G: EM1900976 #4 Sulphate and Chloride has been confirmed by re-prep and reanalysis.
- ED093F: EM1900976 #6 and #7, samples have been diluted prior to analysis and LOR has been raised accordingly.
- Ionic Balance out of acceptable limits for sample #4, #15, #16 and #17 due to analytes not quantified in this report.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- EP075: 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- EA016: Calculated TDS is determined from Electrical conductivity using a conversion factor of 0.65.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW03_23/1/19 | MW02_23/1/19 | GW05_23/1/19 | QC101_23/1/19 | MW10_23/1/19 |
|---|-------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-001 | EM1900976-002 | EM1900976-003 | EM1900976-004 | EM1900976-005 |
| | | | | | Result | Result | Result | Result | Result |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 7.06 | 6.67 | 6.50 | 6.48 | 6.92 |
| EA006: Sodium Adsorption Ratio (SAR) | | | | | | | | | |
| ^ Sodium Adsorption Ratio | ---- | 0.01 | - | | 12.2 | 12.2 | 17.7 | 16.0 | 43.7 |
| EA010P: Conductivity by PC Titrator | | | | | | | | | |
| Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | | 4380 | 4110 | 8130 | 8120 | 6290 |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C | | | | | | | | | |
| Total Dissolved Solids @180°C | ---- | 10 | mg/L | | 2640 | 2410 | 5050 | 5140 | 3780 |
| EA016: Calculated TDS (from Electrical Conductivity) | | | | | | | | | |
| Total Dissolved Solids (Calc.) | ---- | 1 | mg/L | | 2850 | 2670 | 5280 | 5280 | 4090 |
| EA065: Total Hardness as CaCO3 | | | | | | | | | |
| Total Hardness as CaCO3 | ---- | 1 | mg/L | | 530 | 470 | 957 | 1140 | 143 |
| ED037P: Alkalinity by PC Titrator | | | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | | <1 | <1 | <1 | <1 | <1 |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | | <1 | <1 | <1 | <1 | <1 |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | | 312 | 267 | 240 | 240 | 442 |
| Total Alkalinity as CaCO3 | ---- | 1 | mg/L | | 312 | 267 | 240 | 240 | 442 |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | | |
| Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | | 106 | 122 | 124 | 126 | 452 |
| ED045G: Chloride by Discrete Analyser | | | | | | | | | |
| Chloride | 16887-00-6 | 1 | mg/L | | 1270 | 1190 | 2800 | 3100 | 1670 |
| ED093F: Dissolved Major Cations | | | | | | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | | 72 | 81 | 98 | 128 | 11 |
| Magnesium | 7439-95-4 | 1 | mg/L | | 85 | 65 | 173 | 200 | 28 |
| Sodium | 7440-23-5 | 1 | mg/L | | 645 | 609 | 1260 | 1240 | 1200 |
| Potassium | 7440-09-7 | 1 | mg/L | | 4 | <1 | <1 | 3 | 41 |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Aluminium | 7429-90-5 | 0.01 | mg/L | | 0.02 | 0.01 | <0.01 | <0.01 | 0.02 |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | 0.006 | 0.005 | 0.001 | 0.001 | 0.011 |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Chromium | 7440-47-3 | 0.001 | mg/L | | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Copper | 7440-50-8 | 0.001 | mg/L | | 0.001 | <0.001 | 0.002 | 0.002 | <0.001 |
| Nickel | 7440-02-0 | 0.001 | mg/L | | 0.005 | 0.008 | 0.003 | 0.003 | 0.004 |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW03_23/1/19 | MW02_23/1/19 | GW05_23/1/19 | QC101_23/1/19 | MW10_23/1/19 |
|---|------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-001 | EM1900976-002 | EM1900976-003 | EM1900976-004 | EM1900976-005 |
| | | | | | Result | Result | Result | Result | Result |
| EG020F: Dissolved Metals by ICP-MS - Continued | | | | | | | | | |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Zinc | 7440-66-6 | 0.005 | mg/L | | 0.179 | 0.061 | 0.036 | 0.042 | 0.029 |
| Iron | 7439-89-6 | 0.05 | mg/L | | 0.33 | 1.00 | <0.05 | <0.05 | 3.02 |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | 0.2 | 0.1 | 0.1 | 0.1 | 0.7 |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | | 0.06 | 0.09 | 0.24 | 0.24 | 0.10 |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EK058G: Nitrate as N by Discrete Analyser | | | | | | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | | 0.03 | <0.01 | 0.02 | 0.01 | <0.01 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.01 | mg/L | | 0.03 | <0.01 | 0.02 | 0.01 | <0.01 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | | 0.7 | 0.3 | 1.2 | 0.8 | 0.3 |
| EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser | | | | | | | | | |
| ^ Total Nitrogen as N | ---- | 0.1 | mg/L | | 0.7 | 0.3 | 1.2 | 0.8 | 0.3 |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | | 0.19 | 0.12 | 0.26 | 0.26 | 0.09 |
| EK071G: Reactive Phosphorus as P by discrete analyser | | | | | | | | | |
| Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EN055: Ionic Balance | | | | | | | | | |
| Total Anions | ---- | 0.01 | meq/L | | 44.3 | 41.4 | 86.4 | 94.9 | 65.4 |
| Total Cations | ---- | 0.01 | meq/L | | 38.7 | 35.9 | 73.9 | 76.9 | 56.1 |
| Ionic Balance | ---- | 0.01 | % | | 6.65 | 7.19 | 7.75 | 10.5 | 7.62 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Isopropylbenzene | 98-82-8 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| n-Propylbenzene | 103-65-1 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW03_23/1/19 | MW02_23/1/19 | GW05_23/1/19 | QC101_23/1/19 | MW10_23/1/19 |
|---|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-001 | EM1900976-002 | EM1900976-003 | EM1900976-004 | EM1900976-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP074A: Monocyclic Aromatic Hydrocarbons - Continued | | | | | | | | | |
| 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| sec-Butylbenzene | 135-98-8 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| tert-Butylbenzene | 98-06-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| p-Isopropyltoluene | 99-87-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| n-Butylbenzene | 104-51-8 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP074B: Oxygenated Compounds | | | | | | | | | |
| Vinyl Acetate | 108-05-4 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| EP074C: Sulfonated Compounds | | | | | | | | | |
| Carbon disulfide | 75-15-0 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP074D: Fumigants | | | | | | | | | |
| 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| Chloromethane | 74-87-3 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| Bromomethane | 74-83-9 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| Chloroethane | 75-00-3 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| Trichlorofluoromethane | 75-69-4 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Iodomethane | 74-88-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW03_23/1/19 | MW02_23/1/19 | GW05_23/1/19 | QC101_23/1/19 | MW10_23/1/19 |
|--|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-001 | EM1900976-002 | EM1900976-003 | EM1900976-004 | EM1900976-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Dibromomethane | 74-95-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,3-Dichloropropane | 142-28-9 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| trans-1,4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| cis-1,4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2,3-Trichloropropane | 96-18-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Pentachloroethane | 76-01-7 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Bromobenzene | 108-86-1 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 2-Chlorotoluene | 95-49-8 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 4-Chlorotoluene | 106-43-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2,3-Trichlorobenzene | 87-61-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Bromodichloromethane | 75-27-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Dibromochloromethane | 124-48-1 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Bromoform | 75-25-2 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP075A: Phenolic Compounds | | | | | | | | | |
| Phenol | 108-95-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2-Methylphenol | 95-48-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| 2-Nitrophenol | 88-75-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW03_23/1/19 | MW02_23/1/19 | GW05_23/1/19 | QC101_23/1/19 | MW10_23/1/19 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-001 | EM1900976-002 | EM1900976-003 | EM1900976-004 | EM1900976-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds - Continued | | | | | | | | | |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Pentachlorophenol | 87-86-5 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Acenaphthylene | 208-96-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Acenaphthene | 83-32-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Fluorene | 86-73-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Phenanthrene | 85-01-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Anthracene | 120-12-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Fluoranthene | 206-44-0 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Pyrene | 129-00-0 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Benzo(a)anthracene | 56-55-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Chrysene | 218-01-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| 7,12-Dimethylbenzo(a)anthracene | 57-97-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Benzo(a)pyrene | 50-32-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Dibenz(a,h)anthracene | 53-70-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Benzo(g,h,i)perylene | 191-24-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Sum of PAHs | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| EP075C: Phthalate Esters | | | | | | | | | |
| Dimethyl phthalate | 131-11-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Diethyl phthalate | 84-66-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | | <10 | <10 | <10 | <10 | <10 |
| Di-n-octylphthalate | 117-84-0 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |

EP075G: Chlorinated Hydrocarbons



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW03_23/1/19 | MW02_23/1/19 | GW05_23/1/19 | QC101_23/1/19 | MW10_23/1/19 |
|---|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-001 | EM1900976-002 | EM1900976-003 | EM1900976-004 | EM1900976-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP075G: Chlorinated Hydrocarbons - Continued | | | | | | | | | |
| 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Hexachloroethane | 67-72-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Hexachloropropylene | 1888-71-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Hexachlorobutadiene | 87-68-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | | <10 | <10 | <10 | <10 | <10 |
| Pentachlorobenzene | 608-93-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| EP075H: Anilines and Benzidines | | | | | | | | | |
| Aniline | 62-53-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4-Chloroaniline | 106-47-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2-Nitroaniline | 88-74-4 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| 3-Nitroaniline | 99-09-2 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| Dibenzofuran | 132-64-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4-Nitroaniline | 100-01-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Carbazole | 86-74-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| beta-BHC | 319-85-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| gamma-BHC | 58-89-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| delta-BHC | 319-86-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Heptachlor | 76-44-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Aldrin | 309-00-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Heptachlor epoxide | 1024-57-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| alpha-Endosulfan | 959-98-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4,4'-DDE | 72-55-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Dieldrin | 60-57-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Endrin | 72-20-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| beta-Endosulfan | 33213-65-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4,4'-DDD | 72-54-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Endosulfan sulfate | 1031-07-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW03_23/1/19 | MW02_23/1/19 | GW05_23/1/19 | QC101_23/1/19 | MW10_23/1/19 |
|--|--------------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-001 | EM1900976-002 | EM1900976-003 | EM1900976-004 | EM1900976-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDT | 50-29-3 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| EP075J: Organophosphorus Pesticides | | | | | | | | | |
| Dichlorvos | 62-73-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Dimethoate | 60-51-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Diazinon | 333-41-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Malathion | 121-75-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Fenthion | 55-38-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Chlorpyrifos | 2921-88-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Chlorfenvinphos | 470-90-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Prothiofos | 34643-46-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Ethion | 563-12-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | <100 | <100 | <100 | <100 |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | <100 | <100 | <100 | <100 |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | <100 | <100 | <100 | <100 |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | <100 | <100 | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | <100 | <100 | <100 | <100 |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | <100 | <100 | <100 | <100 |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW03_23/1/19 | MW02_23/1/19 | GW05_23/1/19 | QC101_23/1/19 | MW10_23/1/19 |
|--|-------------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-001 | EM1900976-002 | EM1900976-003 | EM1900976-004 | EM1900976-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP080: BTEXN - Continued | | | | | | | | | |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.002 | µg/L | | ---- | ---- | 0.035 | 0.033 | ---- |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.002 | µg/L | | ---- | ---- | 0.009 | 0.009 | ---- |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.002 | µg/L | | ---- | ---- | 0.025 | 0.024 | ---- |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.002 | µg/L | | ---- | ---- | <0.002 | <0.002 | ---- |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.002 | µg/L | | ---- | ---- | <0.002 | <0.002 | ---- |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.002 | µg/L | | ---- | ---- | <0.002 | <0.002 | ---- |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.01 | µg/L | | ---- | ---- | <0.01 | <0.01 | ---- |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.002 | µg/L | | ---- | ---- | 0.007 | 0.011 | ---- |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.002 | µg/L | | ---- | ---- | 0.018 | 0.023 | ---- |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.002 | µg/L | | ---- | ---- | 0.008 | 0.008 | ---- |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.002 | µg/L | | ---- | ---- | 0.008 | 0.007 | ---- |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.002 | µg/L | | ---- | ---- | <0.002 | <0.002 | ---- |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.002 | µg/L | | ---- | ---- | <0.002 | <0.002 | ---- |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.002 | µg/L | | ---- | ---- | <0.002 | <0.002 | ---- |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.002 | µg/L | | ---- | ---- | <0.002 | <0.002 | ---- |
| Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.002 | µg/L | | ---- | ---- | <0.002 | <0.002 | ---- |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.005 | µg/L | | ---- | ---- | <0.005 | <0.005 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW03_23/1/19 | MW02_23/1/19 | GW05_23/1/19 | QC101_23/1/19 | MW10_23/1/19 |
|--|--------------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-001 | EM1900976-002 | EM1900976-003 | EM1900976-004 | EM1900976-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP231B: Perfluoroalkyl Carboxylic Acids - Continued | | | | | | | | | |
| Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.005 | µg/L | | ---- | ---- | <0.005 | <0.005 | ---- |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.002 | µg/L | | ---- | ---- | <0.002 | <0.002 | ---- |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.005 | µg/L | | ---- | ---- | <0.005 | <0.005 | ---- |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.005 | µg/L | | ---- | ---- | <0.005 | <0.005 | ---- |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.005 | µg/L | | ---- | ---- | <0.005 | <0.005 | ---- |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.005 | µg/L | | ---- | ---- | <0.005 | <0.005 | ---- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.002 | µg/L | | ---- | ---- | <0.002 | <0.002 | ---- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.002 | µg/L | | ---- | ---- | <0.002 | <0.002 | ---- |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.005 | µg/L | | ---- | ---- | <0.005 | <0.005 | ---- |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.005 | µg/L | | ---- | ---- | <0.005 | <0.005 | ---- |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.005 | µg/L | | ---- | ---- | <0.005 | <0.005 | ---- |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.005 | µg/L | | ---- | ---- | <0.005 | <0.005 | ---- |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.002 | µg/L | | ---- | ---- | 0.110 | 0.115 | ---- |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.002 | µg/L | | ---- | ---- | 0.025 | 0.024 | ---- |
| Sum of PFAS (WA DER List) | ---- | 0.002 | µg/L | | ---- | ---- | 0.101 | 0.106 | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 96.5 | 98.8 | 100 | 98.9 | 96.4 |
| Toluene-D8 | 2037-26-5 | 5 | % | | 97.0 | 101 | 103 | 99.7 | 97.6 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW03_23/1/19 | MW02_23/1/19 | GW05_23/1/19 | QC101_23/1/19 | MW10_23/1/19 |
|---|------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-001 | EM1900976-002 | EM1900976-003 | EM1900976-004 | EM1900976-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP074S: VOC Surrogates - Continued | | | | | | | | | |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 91.0 | 97.0 | 97.9 | 101 | 96.7 |
| EP075S: Acid Extractable Surrogates | | | | | | | | | |
| 2-Fluorophenol | 367-12-4 | 2 | % | | 42.6 | 43.3 | 31.8 | 49.6 | 42.4 |
| Phenol-d6 | 13127-88-3 | 2 | % | | 26.2 | 27.6 | 20.8 | 31.3 | 27.9 |
| 2-Chlorophenol-D4 | 93951-73-6 | 2 | % | | 63.2 | 64.5 | 45.1 | 66.0 | 62.5 |
| 2,4,6-Tribromophenol | 118-79-6 | 2 | % | | 73.9 | 74.7 | 49.0 | 77.7 | 73.9 |
| EP075T: Base/Neutral Extractable Surrogates | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 2 | % | | 76.4 | 77.4 | 53.9 | 84.4 | 73.2 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 2 | % | | 70.9 | 71.6 | 51.6 | 65.7 | 56.8 |
| 2-Fluorobiphenyl | 321-60-8 | 2 | % | | 80.3 | 84.3 | 59.0 | 82.1 | 73.8 |
| Anthracene-d10 | 1719-06-8 | 2 | % | | 106 | 108 | 84.2 | 106 | 94.0 |
| 4-Terphenyl-d14 | 1718-51-0 | 2 | % | | 96.6 | 99.6 | 68.5 | 110 | 108 |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 96.0 | 98.6 | 99.1 | 98.1 | 95.8 |
| Toluene-D8 | 2037-26-5 | 2 | % | | 91.5 | 95.4 | 97.2 | 94.2 | 92.4 |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 98.5 | 97.7 | 98.8 | 98.5 | 95.4 |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.002 | % | | ---- | ---- | 77.2 | 82.2 | ---- |
| 13C8-PFOA | ---- | 0.002 | % | | ---- | ---- | 89.0 | 96.7 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW09_23/1/19 | MW11_23/1/19 | MW15_23/1/19 | QC301_23/1/19 | QC302_23/1/19 |
|---|-------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-006 | EM1900976-007 | EM1900976-008 | EM1900976-009 | EM1900976-010 |
| | | | | | Result | Result | Result | Result | Result |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 6.56 | 6.67 | 6.54 | 7.12 | 6.30 |
| EA006: Sodium Adsorption Ratio (SAR) | | | | | | | | | |
| ^ Sodium Adsorption Ratio | ---- | 0.01 | - | | 19.4 | 21.5 | 10.8 | 0.12 | 0.12 |
| EA010P: Conductivity by PC Titrator | | | | | | | | | |
| Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | | 21300 | 28800 | 6930 | 2 | 3 |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C | | | | | | | | | |
| Total Dissolved Solids @180°C | ---- | 10 | mg/L | | 14300 | 21400 | 4870 | <10 | <10 |
| EA016: Calculated TDS (from Electrical Conductivity) | | | | | | | | | |
| Total Dissolved Solids (Calc.) | ---- | 1 | mg/L | | 13800 | 18700 | 4500 | 1 | 2 |
| EA065: Total Hardness as CaCO3 | | | | | | | | | |
| Total Hardness as CaCO3 | ---- | 1 | mg/L | | 4530 | 6500 | 1360 | <1 | <1 |
| ED037P: Alkalinity by PC Titrator | | | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | | <1 | <1 | <1 | <1 | <1 |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | | <1 | <1 | <1 | <1 | <1 |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | | 217 | 596 | 212 | 1 | <1 |
| Total Alkalinity as CaCO3 | ---- | 1 | mg/L | | 217 | 596 | 212 | 1 | <1 |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | | |
| Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | | 1220 | 1170 | 554 | <1 | <1 |
| ED045G: Chloride by Discrete Analyser | | | | | | | | | |
| Chloride | 16887-00-6 | 1 | mg/L | | 7590 | 10300 | 2300 | <1 | <1 |
| ED093F: Dissolved Major Cations | | | | | | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | | 809 | 1270 | 199 | <1 | <1 |
| Magnesium | 7439-95-4 | 1 | mg/L | | 610 | 809 | 211 | <1 | <1 |
| Sodium | 7440-23-5 | 1 | mg/L | | 3000 | 3990 | 917 | <1 | <1 |
| Potassium | 7440-09-7 | 1 | mg/L | | <2 | <2 | <1 | <1 | <1 |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Aluminium | 7429-90-5 | 0.01 | mg/L | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | 0.012 | 0.003 | 0.001 | <0.001 | <0.001 |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Chromium | 7440-47-3 | 0.001 | mg/L | | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | 0.009 | 0.001 | <0.001 | <0.001 |
| Nickel | 7440-02-0 | 0.001 | mg/L | | 0.008 | 0.009 | 0.012 | <0.001 | <0.001 |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW09_23/1/19 | MW11_23/1/19 | MW15_23/1/19 | QC301_23/1/19 | QC302_23/1/19 |
|---|------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-006 | EM1900976-007 | EM1900976-008 | EM1900976-009 | EM1900976-010 |
| | | | | | Result | Result | Result | Result | Result |
| EG020F: Dissolved Metals by ICP-MS - Continued | | | | | | | | | |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Zinc | 7440-66-6 | 0.005 | mg/L | | 0.054 | 0.072 | 0.093 | <0.005 | <0.005 |
| Iron | 7439-89-6 | 0.05 | mg/L | | 3.59 | 0.26 | <0.05 | <0.05 | <0.05 |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | 0.4 | 0.3 | 0.2 | <0.1 | <0.1 |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | | 0.50 | 0.31 | 0.05 | <0.01 | <0.01 |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EK058G: Nitrate as N by Discrete Analyser | | | | | | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | | <0.01 | 0.03 | 0.01 | <0.01 | <0.01 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.01 | mg/L | | <0.01 | 0.03 | 0.01 | <0.01 | <0.01 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | | 0.9 | 1.0 | 0.5 | <0.1 | <0.1 |
| EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser | | | | | | | | | |
| ^ Total Nitrogen as N | ---- | 0.1 | mg/L | | 0.9 | 1.0 | 0.5 | <0.1 | <0.1 |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | | 0.33 | 0.39 | 0.17 | <0.01 | <0.01 |
| EK071G: Reactive Phosphorus as P by discrete analyser | | | | | | | | | |
| Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | | <0.01 | 0.01 | <0.01 | <0.01 | <0.01 |
| EN055: Ionic Balance | | | | | | | | | |
| Total Anions | ---- | 0.01 | meq/L | | 244 | 327 | 80.6 | 0.02 | <0.01 |
| Total Cations | ---- | 0.01 | meq/L | | 221 | 304 | 67.2 | <0.01 | <0.01 |
| Ionic Balance | ---- | 0.01 | % | | ---- | ---- | ---- | ---- | <0.01 |
| Ionic Balance | ---- | 0.01 | % | | 4.90 | 3.70 | 9.11 | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Isopropylbenzene | 98-82-8 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW09_23/1/19 | MW11_23/1/19 | MW15_23/1/19 | QC301_23/1/19 | QC302_23/1/19 |
|---|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-006 | EM1900976-007 | EM1900976-008 | EM1900976-009 | EM1900976-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP074A: Monocyclic Aromatic Hydrocarbons - Continued | | | | | | | | | |
| n-Propylbenzene | 103-65-1 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| sec-Butylbenzene | 135-98-8 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| tert-Butylbenzene | 98-06-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| p-Isopropyltoluene | 99-87-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| n-Butylbenzene | 104-51-8 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP074B: Oxygenated Compounds | | | | | | | | | |
| Vinyl Acetate | 108-05-4 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| EP074C: Sulfonated Compounds | | | | | | | | | |
| Carbon disulfide | 75-15-0 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP074D: Fumigants | | | | | | | | | |
| 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| Chloromethane | 74-87-3 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| Bromomethane | 74-83-9 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| Chloroethane | 75-00-3 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| Trichlorofluoromethane | 75-69-4 | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Iodomethane | 74-88-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW09_23/1/19 | MW11_23/1/19 | MW15_23/1/19 | QC301_23/1/19 | QC302_23/1/19 |
|--|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-006 | EM1900976-007 | EM1900976-008 | EM1900976-009 | EM1900976-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Dibromomethane | 74-95-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,3-Dichloropropane | 142-28-9 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| trans-1,4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| cis-1,4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2,3-Trichloropropane | 96-18-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Pentachloroethane | 76-01-7 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Bromobenzene | 108-86-1 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 2-Chlorotoluene | 95-49-8 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 4-Chlorotoluene | 106-43-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| 1,2,3-Trichlorobenzene | 87-61-6 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Bromodichloromethane | 75-27-4 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Dibromochloromethane | 124-48-1 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| Bromoform | 75-25-2 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP075A: Phenolic Compounds | | | | | | | | | |
| Phenol | 108-95-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2-Methylphenol | 95-48-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| 2-Nitrophenol | 88-75-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW09_23/1/19 | MW11_23/1/19 | MW15_23/1/19 | QC301_23/1/19 | QC302_23/1/19 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-006 | EM1900976-007 | EM1900976-008 | EM1900976-009 | EM1900976-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds - Continued | | | | | | | | | |
| 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Pentachlorophenol | 87-86-5 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Acenaphthylene | 208-96-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Acenaphthene | 83-32-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Fluorene | 86-73-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Phenanthrene | 85-01-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Anthracene | 120-12-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Fluoranthene | 206-44-0 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Pyrene | 129-00-0 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Benzo(a)anthracene | 56-55-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Chrysene | 218-01-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| 7,12-Dimethylbenzo(a)anthracene | 57-97-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Benzo(a)pyrene | 50-32-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Dibenz(a,h)anthracene | 53-70-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Benzo(g,h,i)perylene | 191-24-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Sum of PAHs | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| EP075C: Phthalate Esters | | | | | | | | | |
| Dimethyl phthalate | 131-11-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Diethyl phthalate | 84-66-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | | <10 | <10 | <10 | <10 | <10 |
| Di-n-octylphthalate | 117-84-0 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW09_23/1/19 | MW11_23/1/19 | MW15_23/1/19 | QC301_23/1/19 | QC302_23/1/19 |
|---|------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-006 | EM1900976-007 | EM1900976-008 | EM1900976-009 | EM1900976-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP075C: Phthalate Esters - Continued | | | | | | | | | |
| EP075D: Nitrosamines | | | | | | | | | |
| N-Nitrosomethylethylamine | 10595-95-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| N-Nitrosodiethylamine | 55-18-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| N-Nitrosopyrrolidine | 930-55-2 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| N-Nitrosomorpholine | 59-89-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| N-Nitrosodi-n-propylamine | 621-64-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| N-Nitrosopiperidine | 100-75-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| N-Nitrosodibutylamine | 924-16-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| N-Nitrosodiphenyl & Diphenylamine | 86-30-6 122-39-4 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| Methapyrilene | 91-80-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| EP075E: Nitroaromatics and Ketones | | | | | | | | | |
| 2-Picoline | 109-06-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Acetophenone | 98-86-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Nitrobenzene | 98-95-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Isophorone | 78-59-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2,6-Dinitrotoluene | 606-20-2 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| 2,4-Dinitrotoluene | 121-14-2 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| 1-Naphthylamine | 134-32-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4-Nitroquinoline-N-oxide | 56-57-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 5-Nitro-o-toluidine | 99-55-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Azobenzene | 103-33-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 1,3,5-Trinitrobenzene | 99-35-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Phenacetin | 62-44-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4-Aminobiphenyl | 92-67-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Pentachloronitrobenzene | 82-68-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Pronamide | 23950-58-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Dimethylaminoazobenzene | 60-11-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Chlorobenzilate | 510-15-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| EP075F: Haloethers | | | | | | | | | |
| Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW09_23/1/19 | MW11_23/1/19 | MW15_23/1/19 | QC301_23/1/19 | QC302_23/1/19 |
|--|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-006 | EM1900976-007 | EM1900976-008 | EM1900976-009 | EM1900976-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP075G: Chlorinated Hydrocarbons | | | | | | | | | |
| 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Hexachloroethane | 67-72-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Hexachloropropylene | 1888-71-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Hexachlorobutadiene | 87-68-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | | <10 | <10 | <10 | <10 | <10 |
| Pentachlorobenzene | 608-93-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| EP075H: Anilines and Benzidines | | | | | | | | | |
| Aniline | 62-53-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4-Chloroaniline | 106-47-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 2-Nitroaniline | 88-74-4 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| 3-Nitroaniline | 99-09-2 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| Dibenzofuran | 132-64-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4-Nitroaniline | 100-01-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Carbazole | 86-74-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| beta-BHC | 319-85-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| gamma-BHC | 58-89-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| delta-BHC | 319-86-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Heptachlor | 76-44-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Aldrin | 309-00-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Heptachlor epoxide | 1024-57-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| alpha-Endosulfan | 959-98-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4,4'-DDE | 72-55-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Dieldrin | 60-57-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Endrin | 72-20-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| beta-Endosulfan | 33213-65-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| 4,4'-DDD | 72-54-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Endosulfan sulfate | 1031-07-8 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW09_23/1/19 | MW11_23/1/19 | MW15_23/1/19 | QC301_23/1/19 | QC302_23/1/19 |
|--|--------------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-006 | EM1900976-007 | EM1900976-008 | EM1900976-009 | EM1900976-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDT | 50-29-3 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 4 | µg/L | | <4 | <4 | <4 | <4 | <4 |
| EP075J: Organophosphorus Pesticides | | | | | | | | | |
| Dichlorvos | 62-73-7 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Dimethoate | 60-51-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Diazinon | 333-41-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Malathion | 121-75-5 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Fenthion | 55-38-9 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Chlorpyrifos | 2921-88-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Chlorfenvinphos | 470-90-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Prothiofos | 34643-46-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| Ethion | 563-12-2 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| C10 - C14 Fraction | ---- | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| C15 - C28 Fraction | ---- | 100 | µg/L | | <100 | <100 | <100 | <100 | <100 |
| C29 - C36 Fraction | ---- | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | <50 | <50 | <50 | <50 | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | <100 | <100 | <100 | <100 | <100 |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | <100 | <100 | <100 | <100 | <100 |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | <100 | <100 | <100 | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | <100 | <100 | <100 | <100 | <100 |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | <100 | <100 | <100 | <100 | <100 |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW09_23/1/19 | MW11_23/1/19 | MW15_23/1/19 | QC301_23/1/19 | QC302_23/1/19 |
|--|-------------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-006 | EM1900976-007 | EM1900976-008 | EM1900976-009 | EM1900976-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP080: BTEXN - Continued | | | | | | | | | |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.01 | µg/L | | ---- | ---- | ---- | <0.01 | ---- |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.002 | µg/L | | ---- | ---- | ---- | <0.002 | ---- |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.005 | µg/L | | ---- | ---- | ---- | <0.005 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW09_23/1/19 | MW11_23/1/19 | MW15_23/1/19 | QC301_23/1/19 | QC302_23/1/19 |
|--|--------------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-006 | EM1900976-007 | EM1900976-008 | EM1900976-009 | EM1900976-010 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP231B: Perfluoroalkyl Carboxylic Acids - Continued | | | | | | | | | |
| Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.005 | µg/L | ---- | ---- | ---- | ---- | <0.005 | ---- |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.002 | µg/L | ---- | ---- | ---- | ---- | <0.002 | ---- |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.005 | µg/L | ---- | ---- | ---- | ---- | <0.005 | ---- |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.005 | µg/L | ---- | ---- | ---- | ---- | <0.005 | ---- |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.005 | µg/L | ---- | ---- | ---- | ---- | <0.005 | ---- |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.005 | µg/L | ---- | ---- | ---- | ---- | <0.005 | ---- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.002 | µg/L | ---- | ---- | ---- | ---- | <0.002 | ---- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.002 | µg/L | ---- | ---- | ---- | ---- | <0.002 | ---- |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.005 | µg/L | ---- | ---- | ---- | ---- | <0.005 | ---- |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.005 | µg/L | ---- | ---- | ---- | ---- | <0.005 | ---- |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.005 | µg/L | ---- | ---- | ---- | ---- | <0.005 | ---- |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.005 | µg/L | ---- | ---- | ---- | ---- | <0.005 | ---- |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.002 | µg/L | ---- | ---- | ---- | ---- | <0.002 | ---- |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.002 | µg/L | ---- | ---- | ---- | ---- | <0.002 | ---- |
| Sum of PFAS (WA DER List) | ---- | 0.002 | µg/L | ---- | ---- | ---- | ---- | <0.002 | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | 96.0 | 92.6 | 90.8 | 92.4 | 105 | |
| Toluene-D8 | 2037-26-5 | 5 | % | 92.5 | 89.3 | 84.8 | 92.4 | 108 | |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW09_23/1/19 | MW11_23/1/19 | MW15_23/1/19 | QC301_23/1/19 | QC302_23/1/19 |
|---|------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-006 | EM1900976-007 | EM1900976-008 | EM1900976-009 | EM1900976-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP074S: VOC Surrogates - Continued | | | | | | | | | |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 88.5 | 94.1 | 90.5 | 84.4 | 108 |
| EP075S: Acid Extractable Surrogates | | | | | | | | | |
| 2-Fluorophenol | 367-12-4 | 2 | % | | 34.4 | 40.1 | 39.2 | 49.2 | 41.8 |
| Phenol-d6 | 13127-88-3 | 2 | % | | 26.6 | 30.6 | 27.2 | 31.5 | 27.0 |
| 2-Chlorophenol-D4 | 93951-73-6 | 2 | % | | 50.3 | 55.0 | 57.3 | 70.4 | 61.6 |
| 2,4,6-Tribromophenol | 118-79-6 | 2 | % | | 60.0 | 67.9 | 66.4 | 69.6 | 59.2 |
| EP075T: Base/Neutral Extractable Surrogates | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 2 | % | | 62.6 | 66.4 | 72.5 | 83.3 | 75.1 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 2 | % | | 49.2 | 50.8 | 64.2 | 71.5 | 64.0 |
| 2-Fluorobiphenyl | 321-60-8 | 2 | % | | 62.3 | 66.6 | 74.0 | 86.6 | 77.4 |
| Anthracene-d10 | 1719-06-8 | 2 | % | | 85.9 | 95.7 | 104 | 99.7 | 107 |
| 4-Terphenyl-d14 | 1718-51-0 | 2 | % | | 83.8 | 88.9 | 94.5 | 105 | 93.3 |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 95.1 | 91.8 | 90.2 | 91.9 | 98.1 |
| Toluene-D8 | 2037-26-5 | 2 | % | | 87.3 | 84.4 | 79.9 | 87.2 | 108 |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 95.8 | 94.9 | 90.4 | 91.4 | 121 |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.002 | % | | ---- | ---- | ---- | 90.9 | ---- |
| 13C8-PFOA | ---- | 0.002 | % | | ---- | ---- | ---- | 93.4 | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC401_23/1/19 | QC402_23/1/19 | QC304_24/1/19 | QC403_24/1/19 | GW04_24/1/19 |
|---|-------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-011 | EM1900976-012 | EM1900976-013 | EM1900976-014 | EM1900976-015 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | ---- | ---- | ---- | 6.18 | ---- | 6.31 |
| EA006: Sodium Adsorption Ratio (SAR) | | | | | | | | | |
| ^ Sodium Adsorption Ratio | ---- | 0.01 | - | ---- | ---- | ---- | 0.12 | ---- | 22.5 |
| EA010P: Conductivity by PC Titrator | | | | | | | | | |
| Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | ---- | ---- | ---- | 3 | ---- | 8550 |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C | | | | | | | | | |
| Total Dissolved Solids @180°C | ---- | 10 | mg/L | ---- | ---- | ---- | <10 | ---- | 5620 |
| EA016: Calculated TDS (from Electrical Conductivity) | | | | | | | | | |
| Total Dissolved Solids (Calc.) | ---- | 1 | mg/L | ---- | ---- | ---- | 2 | ---- | 5560 |
| EA065: Total Hardness as CaCO3 | | | | | | | | | |
| Total Hardness as CaCO3 | ---- | 1 | mg/L | ---- | ---- | ---- | <1 | ---- | 754 |
| ED037P: Alkalinity by PC Titrator | | | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | ---- | ---- | ---- | <1 | ---- | <1 |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | ---- | ---- | ---- | <1 | ---- | <1 |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | ---- | ---- | ---- | 3 | ---- | 156 |
| Total Alkalinity as CaCO3 | ---- | 1 | mg/L | ---- | ---- | ---- | 3 | ---- | 156 |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | | |
| Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | ---- | ---- | ---- | <1 | ---- | 244 |
| ED045G: Chloride by Discrete Analyser | | | | | | | | | |
| Chloride | 16887-00-6 | 1 | mg/L | ---- | ---- | ---- | <1 | ---- | 3070 |
| ED093F: Dissolved Major Cations | | | | | | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | ---- | ---- | ---- | <1 | ---- | 68 |
| Magnesium | 7439-95-4 | 1 | mg/L | ---- | ---- | ---- | <1 | ---- | 142 |
| Sodium | 7440-23-5 | 1 | mg/L | ---- | ---- | ---- | <1 | ---- | 1420 |
| Potassium | 7440-09-7 | 1 | mg/L | ---- | ---- | ---- | <1 | ---- | <1 |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Aluminium | 7429-90-5 | 0.01 | mg/L | ---- | ---- | ---- | <0.01 | ---- | <0.01 |
| Arsenic | 7440-38-2 | 0.001 | mg/L | ---- | ---- | ---- | <0.001 | ---- | 0.001 |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | ---- | ---- | ---- | <0.0001 | ---- | <0.0001 |
| Chromium | 7440-47-3 | 0.001 | mg/L | ---- | ---- | ---- | <0.001 | ---- | <0.001 |
| Copper | 7440-50-8 | 0.001 | mg/L | ---- | ---- | ---- | <0.001 | ---- | 0.004 |
| Nickel | 7440-02-0 | 0.001 | mg/L | ---- | ---- | ---- | <0.001 | ---- | 0.019 |
| Lead | 7439-92-1 | 0.001 | mg/L | ---- | ---- | ---- | <0.001 | ---- | <0.001 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC401_23/1/19 | QC402_23/1/19 | QC304_24/1/19 | QC403_24/1/19 | GW04_24/1/19 |
|---|------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-011 | EM1900976-012 | EM1900976-013 | EM1900976-014 | EM1900976-015 |
| | | | | Result | Result | Result | Result | Result | Result |
| EG020F: Dissolved Metals by ICP-MS - Continued | | | | | | | | | |
| Selenium | 7782-49-2 | 0.01 | mg/L | ---- | ---- | | <0.01 | ---- | <0.01 |
| Zinc | 7440-66-6 | 0.005 | mg/L | ---- | ---- | | <0.005 | ---- | 0.114 |
| Iron | 7439-89-6 | 0.05 | mg/L | ---- | ---- | | <0.05 | ---- | 1.02 |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | ---- | ---- | | <0.0001 | ---- | <0.0001 |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | ---- | ---- | | <0.01 | ---- | <0.01 |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | ---- | ---- | | <0.1 | ---- | <0.1 |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | ---- | ---- | | <0.01 | ---- | 0.04 |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | ---- | ---- | | <0.01 | ---- | <0.01 |
| EK058G: Nitrate as N by Discrete Analyser | | | | | | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | ---- | ---- | | <0.01 | ---- | 0.02 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.01 | mg/L | ---- | ---- | | <0.01 | ---- | 0.02 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | ---- | ---- | | <0.1 | ---- | 1.2 |
| EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser | | | | | | | | | |
| ^ Total Nitrogen as N | ---- | 0.1 | mg/L | ---- | ---- | | <0.1 | ---- | 1.2 |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | ---- | ---- | | <0.01 | ---- | 0.40 |
| EK071G: Reactive Phosphorus as P by discrete analyser | | | | | | | | | |
| Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | ---- | ---- | | <0.01 | ---- | <0.01 |
| EN055: Ionic Balance | | | | | | | | | |
| Total Anions | ---- | 0.01 | meq/L | ---- | ---- | | 0.06 | ---- | 94.8 |
| Total Cations | ---- | 0.01 | meq/L | ---- | ---- | | <0.01 | ---- | 76.8 |
| Ionic Balance | ---- | 0.01 | % | ---- | ---- | | ---- | ---- | 10.4 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | ---- | ---- | | <5 | ---- | <5 |
| Isopropylbenzene | 98-82-8 | 5 | µg/L | ---- | ---- | | <5 | ---- | <5 |
| n-Propylbenzene | 103-65-1 | 5 | µg/L | ---- | ---- | | <5 | ---- | <5 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC401_23/1/19 | QC402_23/1/19 | QC304_24/1/19 | QC403_24/1/19 | GW04_24/1/19 |
|---|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-011 | EM1900976-012 | EM1900976-013 | EM1900976-014 | EM1900976-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP074A: Monocyclic Aromatic Hydrocarbons - Continued | | | | | | | | | |
| 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| sec-Butylbenzene | 135-98-8 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| tert-Butylbenzene | 98-06-6 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| p-Isopropyltoluene | 99-87-6 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| n-Butylbenzene | 104-51-8 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| EP074B: Oxygenated Compounds | | | | | | | | | |
| Vinyl Acetate | 108-05-4 | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| EP074C: Sulfonated Compounds | | | | | | | | | |
| Carbon disulfide | 75-15-0 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| EP074D: Fumigants | | | | | | | | | |
| 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| Chloromethane | 74-87-3 | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| Vinyl chloride | 75-01-4 | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| Bromomethane | 74-83-9 | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| Chloroethane | 75-00-3 | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| Trichlorofluoromethane | 75-69-4 | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Iodomethane | 74-88-4 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC401_23/1/19 | QC402_23/1/19 | QC304_24/1/19 | QC403_24/1/19 | GW04_24/1/19 |
|--|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-011 | EM1900976-012 | EM1900976-013 | EM1900976-014 | EM1900976-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Trichloroethene | 79-01-6 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Dibromomethane | 74-95-3 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,3-Dichloropropane | 142-28-9 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| trans-1,4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| cis-1,4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,2,3-Trichloropropane | 96-18-4 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Pentachloroethane | 76-01-7 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Bromobenzene | 108-86-1 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 2-Chlorotoluene | 95-49-8 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 4-Chlorotoluene | 106-43-4 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| 1,2,3-Trichlorobenzene | 87-61-6 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Bromodichloromethane | 75-27-4 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Dibromochloromethane | 124-48-1 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| Bromoform | 75-25-2 | 5 | µg/L | | ---- | ---- | <5 | ---- | <5 |
| EP075A: Phenolic Compounds | | | | | | | | | |
| Phenol | 108-95-2 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 2-Methylphenol | 95-48-7 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | ---- | ---- | <4 | ---- | <4 |
| 2-Nitrophenol | 88-75-5 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC401_23/1/19 | QC402_23/1/19 | QC304_24/1/19 | QC403_24/1/19 | GW04_24/1/19 |
|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-011 | EM1900976-012 | EM1900976-013 | EM1900976-014 | EM1900976-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds - Continued | | | | | | | | | |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Pentachlorophenol | 87-86-5 | 4 | µg/L | | ---- | ---- | <4 | ---- | <4 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Acenaphthylene | 208-96-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Acenaphthene | 83-32-9 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Fluorene | 86-73-7 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Phenanthrene | 85-01-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Anthracene | 120-12-7 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Fluoranthene | 206-44-0 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Pyrene | 129-00-0 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Benzo(a)anthracene | 56-55-3 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Chrysene | 218-01-9 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 4 | µg/L | | ---- | ---- | <4 | ---- | <4 |
| 7,12-Dimethylbenzo(a)anthracene | 57-97-6 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Benzo(a)pyrene | 50-32-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Dibenz(a,h)anthracene | 53-70-3 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Benzo(g,h,i)perylene | 191-24-2 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| ^ Sum of PAHs | ---- | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| EP075C: Phthalate Esters | | | | | | | | | |
| Dimethyl phthalate | 131-11-3 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Diethyl phthalate | 84-66-2 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | | ---- | ---- | <10 | ---- | <10 |
| Di-n-octylphthalate | 117-84-0 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |

| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC401_23/1/19 | QC402_23/1/19 | QC304_24/1/19 | QC403_24/1/19 | GW04_24/1/19 |
|--------------------------------------|------------------|-----|------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------|
| Client sampling date / time | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | |
| Compound | CAS Number | LOR | Unit | EM1900976-011 | EM1900976-012 | EM1900976-013 | EM1900976-014 | EM1900976-015 | |
| | | | | Result | Result | Result | Result | Result | |
| EP075D: Nitrosamines | | | | | | | | | |
| N-Nitrosomethylethylamine | 10595-95-6 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| N-Nitrosodiethylamine | 55-18-5 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| N-Nitrosopyrrolidine | 930-55-2 | 4 | µg/L | ---- | ---- | <4 | ---- | <4 | |
| N-Nitrosomorpholine | 59-89-2 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| N-Nitrosodi-n-propylamine | 621-64-7 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| N-Nitrosopiperidine | 100-75-4 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| N-Nitrosodibutylamine | 924-16-3 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| N-Nitrosodiphenyl & Diphenylamine | 86-30-6 122-39-4 | 4 | µg/L | ---- | ---- | <4 | ---- | <4 | |
| Methapyrilene | 91-80-5 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| EP075E: Nitroaromatics and Ketones | | | | | | | | | |
| 2-Picoline | 109-06-8 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| Acetophenone | 98-86-2 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| Nitrobenzene | 98-95-3 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| Isophorone | 78-59-1 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| 2,6-Dinitrotoluene | 606-20-2 | 4 | µg/L | ---- | ---- | <4 | ---- | <4 | |
| 2,4-Dinitrotoluene | 121-14-2 | 4 | µg/L | ---- | ---- | <4 | ---- | <4 | |
| 1-Naphthylamine | 134-32-7 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| 4-Nitroquinoline-N-oxide | 56-57-5 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| 5-Nitro-o-toluidine | 99-55-8 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| Azobenzene | 103-33-3 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| 1,3,5-Trinitrobenzene | 99-35-4 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| Phenacetin | 62-44-2 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| 4-Aminobiphenyl | 92-67-1 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| Pentachloronitrobenzene | 82-68-8 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| Pronamide | 23950-58-5 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| Dimethylaminoazobenzene | 60-11-7 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| Chlorobenzilate | 510-15-6 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| EP075F: Haloethers | | | | | | | | | |
| Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | ---- | ---- | <2 | ---- | <2 | |
| EP075G: Chlorinated Hydrocarbons | | | | | | | | | |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC401_23/1/19 | QC402_23/1/19 | QC304_24/1/19 | QC403_24/1/19 | GW04_24/1/19 |
|---|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-011 | EM1900976-012 | EM1900976-013 | EM1900976-014 | EM1900976-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP075G: Chlorinated Hydrocarbons - Continued | | | | | | | | | |
| 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Hexachloroethane | 67-72-1 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Hexachloropropylene | 1888-71-7 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Hexachlorobutadiene | 87-68-3 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | | ---- | ---- | <10 | ---- | <10 |
| Pentachlorobenzene | 608-93-5 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | | ---- | ---- | <4 | ---- | <4 |
| EP075H: Anilines and Benzidines | | | | | | | | | |
| Aniline | 62-53-3 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 4-Chloroaniline | 106-47-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 2-Nitroaniline | 88-74-4 | 4 | µg/L | | ---- | ---- | <4 | ---- | <4 |
| 3-Nitroaniline | 99-09-2 | 4 | µg/L | | ---- | ---- | <4 | ---- | <4 |
| Dibenzofuran | 132-64-9 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 4-Nitroaniline | 100-01-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Carbazole | 86-74-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| beta-BHC | 319-85-7 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| gamma-BHC | 58-89-9 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| delta-BHC | 319-86-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Heptachlor | 76-44-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Aldrin | 309-00-2 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Heptachlor epoxide | 1024-57-3 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| alpha-Endosulfan | 959-98-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 4,4'-DDE | 72-55-9 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Dieldrin | 60-57-1 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Endrin | 72-20-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| beta-Endosulfan | 33213-65-9 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| 4,4'-DDD | 72-54-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Endosulfan sulfate | 1031-07-8 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC401_23/1/19 | QC402_23/1/19 | QC304_24/1/19 | QC403_24/1/19 | GW04_24/1/19 |
|--|--------------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-011 | EM1900976-012 | EM1900976-013 | EM1900976-014 | EM1900976-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDT | 50-29-3 | 4 | µg/L | | ---- | ---- | <4 | ---- | <4 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 4 | µg/L | | ---- | ---- | <4 | ---- | <4 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 4 | µg/L | | ---- | ---- | <4 | ---- | <4 |
| EP075J: Organophosphorus Pesticides | | | | | | | | | |
| Dichlorvos | 62-73-7 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Dimethoate | 60-51-5 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Diazinon | 333-41-5 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Malathion | 121-75-5 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Fenthion | 55-38-9 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Chlorpyrifos | 2921-88-2 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Chlorfenvinphos | 470-90-6 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Prothiofos | 34643-46-4 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| Ethion | 563-12-2 | 2 | µg/L | | ---- | ---- | <2 | ---- | <2 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| C10 - C14 Fraction | ---- | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| C15 - C28 Fraction | ---- | 100 | µg/L | | ---- | ---- | <100 | ---- | <100 |
| C29 - C36 Fraction | ---- | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | | ---- | ---- | <50 | ---- | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | | <20 | <20 | <20 | <20 | <20 |
| >C10 - C16 Fraction | ---- | 100 | µg/L | | ---- | ---- | <100 | ---- | <100 |
| >C16 - C34 Fraction | ---- | 100 | µg/L | | ---- | ---- | <100 | ---- | <100 |
| >C34 - C40 Fraction | ---- | 100 | µg/L | | ---- | ---- | <100 | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | | ---- | ---- | <100 | ---- | <100 |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | | ---- | ---- | <100 | ---- | <100 |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC401_23/1/19 | QC402_23/1/19 | QC304_24/1/19 | QC403_24/1/19 | GW04_24/1/19 |
|--|-------------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-011 | EM1900976-012 | EM1900976-013 | EM1900976-014 | EM1900976-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP080: BTEXN - Continued | | | | | | | | | |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | <2 | <2 | <2 |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | <1 | <1 | <1 |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | <5 | <5 | <5 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.01 | µg/L | | ---- | ---- | ---- | ---- | <0.01 |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.005 | µg/L | | ---- | ---- | ---- | ---- | <0.005 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC401_23/1/19 | QC402_23/1/19 | QC304_24/1/19 | QC403_24/1/19 | GW04_24/1/19 |
|--|--------------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-011 | EM1900976-012 | EM1900976-013 | EM1900976-014 | EM1900976-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP231B: Perfluoroalkyl Carboxylic Acids - Continued | | | | | | | | | |
| Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.005 | µg/L | | ---- | ---- | ---- | ---- | <0.005 |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.005 | µg/L | | ---- | ---- | ---- | ---- | <0.005 |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.005 | µg/L | | ---- | ---- | ---- | ---- | <0.005 |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.005 | µg/L | | ---- | ---- | ---- | ---- | <0.005 |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.005 | µg/L | | ---- | ---- | ---- | ---- | <0.005 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.005 | µg/L | | ---- | ---- | ---- | ---- | <0.005 |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.005 | µg/L | | ---- | ---- | ---- | ---- | <0.005 |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.005 | µg/L | | ---- | ---- | ---- | ---- | <0.005 |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.005 | µg/L | | ---- | ---- | ---- | ---- | <0.005 |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| Sum of PFAS (WA DER List) | ---- | 0.002 | µg/L | | ---- | ---- | ---- | ---- | <0.002 |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | ---- | ---- | 97.2 | ---- | 96.8 |
| Toluene-D8 | 2037-26-5 | 5 | % | | ---- | ---- | 99.7 | ---- | 98.0 |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC401_23/1/19 | QC402_23/1/19 | QC304_24/1/19 | QC403_24/1/19 | GW04_24/1/19 |
|--|------------|-------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 23-Jan-2019 00:00 | 23-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1900976-011 | EM1900976-012 | EM1900976-013 | EM1900976-014 | EM1900976-015 |
| | | | | | Result | Result | Result | Result | Result |
| EP074S: VOC Surrogates - Continued | | | | | | | | | |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | ---- | ---- | 96.2 | ---- | 94.9 |
| EP075S: Acid Extractable Surrogates | | | | | | | | | |
| 2-Fluorophenol | 367-12-4 | 2 | % | | ---- | ---- | 50.6 | ---- | 51.9 |
| Phenol-d6 | 13127-88-3 | 2 | % | | ---- | ---- | 31.9 | ---- | 35.6 |
| 2-Chlorophenol-D4 | 93951-73-6 | 2 | % | | ---- | ---- | 69.7 | ---- | 74.4 |
| 2,4,6-Tribromophenol | 118-79-6 | 2 | % | | ---- | ---- | 72.8 | ---- | 81.4 |
| EP075T: Base/Neutral Extractable Surrogates | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 2 | % | | ---- | ---- | 84.0 | ---- | 85.2 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 2 | % | | ---- | ---- | 73.4 | ---- | 78.7 |
| 2-Fluorobiphenyl | 321-60-8 | 2 | % | | ---- | ---- | 86.1 | ---- | 90.2 |
| Anthracene-d10 | 1719-06-8 | 2 | % | | ---- | ---- | 105 | ---- | 110 |
| 4-Terphenyl-d14 | 1718-51-0 | 2 | % | | ---- | ---- | 98.3 | ---- | 100 |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 95.9 | 94.7 | 96.7 | 95.5 | 96.2 |
| Toluene-D8 | 2037-26-5 | 2 | % | | 97.0 | 93.8 | 94.1 | 93.4 | 92.5 |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 98.4 | 96.2 | 97.0 | 96.9 | 95.1 |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.002 | % | | ---- | ---- | ---- | ---- | 82.9 |
| 13C8-PFOA | ---- | 0.002 | % | | ---- | ---- | ---- | ---- | 93.0 |



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|---|-------------|--------|---------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW14_24/1/19 | MW07_24/1/19 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900976-016 | EM1900976-017 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 6.86 | 7.42 | ---- | ---- | ---- |
| EA006: Sodium Adsorption Ratio (SAR) | | | | | | | | | |
| ^ Sodium Adsorption Ratio | ---- | 0.01 | - | | 22.1 | 14.4 | ---- | ---- | ---- |
| EA010P: Conductivity by PC Titrator | | | | | | | | | |
| Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | | 7080 | 1360 | ---- | ---- | ---- |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C | | | | | | | | | |
| Total Dissolved Solids @180°C | ---- | 10 | mg/L | | 4750 | 1120 | ---- | ---- | ---- |
| EA016: Calculated TDS (from Electrical Conductivity) | | | | | | | | | |
| Total Dissolved Solids (Calc.) | ---- | 1 | mg/L | | 4600 | 884 | ---- | ---- | ---- |
| EA065: Total Hardness as CaCO3 | | | | | | | | | |
| Total Hardness as CaCO3 | ---- | 1 | mg/L | | 633 | 65 | ---- | ---- | ---- |
| ED037P: Alkalinity by PC Titrator | | | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | | <1 | <1 | ---- | ---- | ---- |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | | <1 | <1 | ---- | ---- | ---- |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | | 355 | 318 | ---- | ---- | ---- |
| Total Alkalinity as CaCO3 | ---- | 1 | mg/L | | 355 | 318 | ---- | ---- | ---- |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | | |
| Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | | 193 | 88 | ---- | ---- | ---- |
| ED045G: Chloride by Discrete Analyser | | | | | | | | | |
| Chloride | 16887-00-6 | 1 | mg/L | | 2640 | 280 | ---- | ---- | ---- |
| ED093F: Dissolved Major Cations | | | | | | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | | 72 | 16 | ---- | ---- | ---- |
| Magnesium | 7439-95-4 | 1 | mg/L | | 110 | 6 | ---- | ---- | ---- |
| Sodium | 7440-23-5 | 1 | mg/L | | 1280 | 266 | ---- | ---- | ---- |
| Potassium | 7440-09-7 | 1 | mg/L | | <1 | <1 | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Aluminium | 7429-90-5 | 0.01 | mg/L | | 0.03 | 0.08 | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | 0.007 | 0.005 | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | <0.0001 | ---- | ---- | ---- |
| Chromium | 7440-47-3 | 0.001 | mg/L | | <0.001 | <0.001 | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | 0.002 | <0.001 | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | 0.004 | 0.002 | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | <0.001 | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW14_24/1/19 | MW07_24/1/19 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900976-016 | EM1900976-017 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS - Continued | | | | | | | | | |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | <0.01 | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | 0.044 | 0.014 | ---- | ---- | ---- |
| Iron | 7439-89-6 | 0.05 | mg/L | | 0.74 | 0.07 | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | <0.0001 | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | <0.01 | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | 0.2 | 0.7 | ---- | ---- | ---- |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | | 0.17 | 0.06 | ---- | ---- | ---- |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | | <0.01 | <0.01 | ---- | ---- | ---- |
| EK058G: Nitrate as N by Discrete Analyser | | | | | | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | | 0.02 | 0.02 | ---- | ---- | ---- |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.01 | mg/L | | 0.02 | 0.02 | ---- | ---- | ---- |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | | 0.5 | 1.4 | ---- | ---- | ---- |
| EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser | | | | | | | | | |
| ^ Total Nitrogen as N | ---- | 0.1 | mg/L | | 0.5 | 1.4 | ---- | ---- | ---- |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | | 0.11 | 0.45 | ---- | ---- | ---- |
| EK071G: Reactive Phosphorus as P by discrete analyser | | | | | | | | | |
| Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | | <0.01 | <0.01 | ---- | ---- | ---- |
| EN055: Ionic Balance | | | | | | | | | |
| Total Anions | ---- | 0.01 | meq/L | | 85.6 | 16.1 | ---- | ---- | ---- |
| Total Cations | ---- | 0.01 | meq/L | | 68.3 | 12.9 | ---- | ---- | ---- |
| Ionic Balance | ---- | 0.01 | % | | 11.2 | 11.1 | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | ---- | <1 | ---- | ---- | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | ---- | <2 | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | ---- | <2 | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW14_24/1/19 | MW07_24/1/19 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900976-016 | EM1900976-017 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons - Continued | | | | | | | | | |
| meta- & para-Xylene | 108-38-3 | 106-42-3 | 2 | µg/L | ---- | <2 | ---- | ---- | ---- |
| Styrene | 100-42-5 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | | 2 | µg/L | ---- | <2 | ---- | ---- | ---- |
| Isopropylbenzene | 98-82-8 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| n-Propylbenzene | 103-65-1 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| 1,3,5-Trimethylbenzene | 108-67-8 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| sec-Butylbenzene | 135-98-8 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| 1,2,4-Trimethylbenzene | 95-63-6 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| tert-Butylbenzene | 98-06-6 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| p-Isopropyltoluene | 99-87-6 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| n-Butylbenzene | 104-51-8 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| EP074B: Oxygenated Compounds | | | | | | | | | |
| Vinyl Acetate | 108-05-4 | | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |
| 2-Butanone (MEK) | 78-93-3 | | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |
| 4-Methyl-2-pentanone (MIBK) | 108-10-1 | | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |
| 2-Hexanone (MBK) | 591-78-6 | | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |
| EP074C: Sulfonated Compounds | | | | | | | | | |
| Carbon disulfide | 75-15-0 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| EP074D: Fumigants | | | | | | | | | |
| 2,2-Dichloropropane | 594-20-7 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| 1,2-Dichloropropane | 78-87-5 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| cis-1,3-Dichloropropylene | 10061-01-5 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| trans-1,3-Dichloropropylene | 10061-02-6 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| 1,2-Dibromoethane (EDB) | 106-93-4 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Dichlorodifluoromethane | 75-71-8 | | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |
| Chloromethane | 74-87-3 | | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |
| Vinyl chloride | 75-01-4 | | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |
| Bromomethane | 74-83-9 | | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |
| Chloroethane | 75-00-3 | | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |
| Trichlorofluoromethane | 75-69-4 | | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| Iodomethane | 74-88-4 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |



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|--|------------|-----|------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW14_24/1/19 | MW07_24/1/19 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900976-016 | EM1900976-017 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| Dibromomethane | 74-95-3 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| 1,3-Dichloropropane | 142-28-9 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| trans-1,4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| cis-1,4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| 1,2,3-Trichloropropane | 96-18-4 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| Pentachloroethane | 76-01-7 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| Bromobenzene | 108-86-1 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| 2-Chlorotoluene | 95-49-8 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| 4-Chlorotoluene | 106-43-4 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| 1,2,3-Trichlorobenzene | 87-61-6 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| Bromodichloromethane | 75-27-4 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| Dibromochloromethane | 124-48-1 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| Bromoform | 75-25-2 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| EP075A: Phenolic Compounds | | | | | | | | | |
| Phenol | 108-95-2 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | <4 | ---- | ---- | ---- |



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|---|-------------------|-----|------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW14_24/1/19 | MW07_24/1/19 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900976-016 | EM1900976-017 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP075A: Phenolic Compounds - Continued | | | | | | | | | |
| 2-Nitrophenol | 88-75-5 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 4 | µg/L | <4 | <4 | | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Benz(a)anthracene | 56-55-3 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 207-08-9 | 4 | µg/L | <4 | <4 | | ---- | ---- | ---- |
| 7,12-Dimethylbenz(a)anthracene | 57-97-6 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| ^ Sum of PAHs | ---- | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| EP075C: Phthalate Esters | | | | | | | | | |
| Dimethyl phthalate | 131-11-3 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Diethyl phthalate | 84-66-2 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |

EP075F: Haloethers



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|---|------------|-----|------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW14_24/1/19 | MW07_24/1/19 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900976-016 | EM1900976-017 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP075F: Haloethers - Continued | | | | | | | | | |
| Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| EP075G: Chlorinated Hydrocarbons | | | | | | | | | |
| 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| Hexachloroethane | 67-72-1 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| Hexachloropropylene | 1888-71-7 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | | <10 | <10 | ---- | ---- | ---- |
| Pentachlorobenzene | 608-93-5 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | | <4 | <4 | ---- | ---- | ---- |
| EP075H: Anilines and Benzidines | | | | | | | | | |
| Aniline | 62-53-3 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 4-Chloroaniline | 106-47-8 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 2-Nitroaniline | 88-74-4 | 4 | µg/L | | <4 | <4 | ---- | ---- | ---- |
| 3-Nitroaniline | 99-09-2 | 4 | µg/L | | <4 | <4 | ---- | ---- | ---- |
| Dibenzofuran | 132-64-9 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 4-Nitroaniline | 100-01-8 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| Carbazole | 86-74-8 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| alpha-Endosulfan | 959-98-8 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| 4,4'-DDE | 72-55-9 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |



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|--|----------------------|-----|------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW14_24/1/19 | MW07_24/1/19 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900976-016 | EM1900976-017 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Dieldrin | 60-57-1 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Endrin | 72-20-8 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| beta-Endosulfan | 33213-65-9 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 4 | µg/L | <4 | <4 | | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 4 | µg/L | <4 | <4 | | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 4 | µg/L | <4 | <4 | | ---- | ---- | ---- |
| EP075J: Organophosphorus Pesticides | | | | | | | | | |
| Dichlorvos | 62-73-7 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Dimethoate | 60-51-5 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Diazinon | 333-41-5 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Malathion | 121-75-5 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Fenthion | 55-38-9 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Chlorpyrifos | 2921-88-2 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Chlorfenvinphos | 470-90-6 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Prothiofos | 34643-46-4 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| Ethion | 563-12-2 | 2 | µg/L | <2 | <2 | | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | <20 | ---- | | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | <50 | ---- | | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | <100 | ---- | | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | <50 | ---- | | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | <50 | ---- | | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | ---- | | ---- | ---- | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | <20 | ---- | | ---- | ---- | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | ---- | | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | ---- | | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | ---- | | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | <100 | ---- | | ---- | ---- | ---- |



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|--|-------------------|-----|------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | MW14_24/1/19 | MW07_24/1/19 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 24-Jan-2019 00:00 | 24-Jan-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1900976-016 | EM1900976-017 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued | | | | | | | | | |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | | | | ---- | 100 | µg/L | <100 | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| ^ Total Xylenes | | | | ---- | 2 | µg/L | <2 | ---- | ---- |
| ^ Sum of BTEX | | | | ---- | 1 | µg/L | <1 | ---- | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 94.7 | 100 | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 96.1 | 96.4 | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 97.4 | 99.7 | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates | | | | | | | | | |
| 2-Fluorophenol | 367-12-4 | 2 | % | | 49.4 | 46.8 | ---- | ---- | ---- |
| Phenol-d6 | 13127-88-3 | 2 | % | | 36.9 | 34.5 | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 2 | % | | 69.7 | 62.5 | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 2 | % | | 80.8 | 91.4 | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 2 | % | | 84.4 | 87.8 | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 2 | % | | 67.8 | 79.6 | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 2 | % | | 83.5 | 93.9 | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 2 | % | | 110 | 94.8 | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 2 | % | | 103 | 109 | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 93.8 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 90.7 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 95.0 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER | | □□□□ □□□ □ s □ | |
|--|-------------------|----------------|------|
| <i>Compound</i> | <i>CAS Number</i> | □□% | □□ □ |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075S: Acid Extractable Surrogates | | | |
| 2-Fluorophenol | 367-12-4 | 10 | 75 |
| Phenol-d6 | 13127-88-3 | 10 | 65 |
| 2-Chlorophenol-D4 | 93951-73-6 | 21 | 103 |
| 2,4,6-Tribromophenol | 118-79-6 | 22 | 120 |
| EP075T: Base/Neutral Extractable Surrogates | | | |
| Nitrobenzene-D5 | 4165-60-0 | 24 | 116 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 23 | 99 |
| 2-Fluorobiphenyl | 321-60-8 | 32 | 114 |
| Anthracene-d10 | 1719-06-8 | 47 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 44 | 124 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |
| EP231S: PFAS Surrogate | | | |
| 13C4-PFOS | ---- | 60 | 120 |
| 13C8-PFOA | ---- | 60 | 120 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : EM1900976

Page : 1 of 22

Client : AECOM Australia Pty Ltd
Contact :
Project : 60592634
Site : GIJPP
Sampler :
Order number : 60592634 Task 1.0

Laboratory : Environmental Division Melbourne
Telephone : +6138549 9645
Date Samples Received : 24-Jan-2019
Issue Date : 05-Feb-2019
No. of samples received : 17
No. of samples analysed : 17

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|--------------------------------|------------|----------------|---------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075E: Nitroaromatics and Ketones | QC-2156163-001 | ---- | 1-Naphthylamine | 134-32-7 | 125 % | 11-119% | Recovery greater than upper control limit |
| Matrix Spike (MS) Recoveries | | | | | | | |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | EM1900947--002 | Anonymous | Sulfate as SO4 - Turbidimetric | 14808-79-8 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | EM1900955--004 | Anonymous | Sulfate as SO4 - Turbidimetric | 14808-79-8 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |
| ED045G: Chloride by Discrete Analyser | EM1900955--002 | Anonymous | Chloride | 16887-00-6 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |
| ED045G: Chloride by Discrete Analyser | EM1900955--004 | Anonymous | Chloride | 16887-00-6 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |
| EK040P: Fluoride by PC Titrator | EM1900918--002 | Anonymous | Fluoride | 16984-48-8 | 6.62 % | 70-130% | Recovery less than lower data quality objective |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | | Extraction / Preparation | | | Analysis | | |
|--|----------------|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural | | | | | | | |
| MW03_23/1/19, | MW02_23/1/19, | ---- | ---- | ---- | 24-Jan-2019 | 23-Jan-2019 | 1 |
| GW05_23/1/19, | QC101_23/1/19, | | | | | | |
| MW10_23/1/19, | MW09_23/1/19, | | | | | | |
| MW11_23/1/19, | MW15_23/1/19, | | | | | | |
| QC301_23/1/19, | QC302_23/1/19 | | | | | | |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | |
| Clear Plastic Bottle - Natural | | | | | | | |
| MW07_24/1/19 | | ---- | ---- | ---- | 30-Jan-2019 | 26-Jan-2019 | 4 |
| EK071G: Reactive Phosphorus as P by discrete analyser | | | | | | | |
| Clear Plastic Bottle - Natural | | | | | | | |
| MW07_24/1/19 | | ---- | ---- | ---- | 30-Jan-2019 | 26-Jan-2019 | 4 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|--------------------------------|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| Semivolatile Organic Compounds | 1 | 15 | 6.67 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 20 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| Semivolatile Organic Compounds | 0 | 15 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 20 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER** Evaluation: **x** = Holding time breach : **✓** = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
MW03_23/1/19, MW05_23/1/19, MW10_23/1/19, MW11_23/1/19, QC301_23/1/19, MW02_23/1/19, QC101_23/1/19, MW09_23/1/19, MW15_23/1/19, QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 24-Jan-2019 | 23-Jan-2019 | ✗ |
| Clear Plastic Bottle - Natural (EA005-P)
QC304_24/1/19, MW14_24/1/19, GW04_24/1/19, MW07_24/1/19 | 24-Jan-2019 | ---- | ---- | ---- | 24-Jan-2019 | 24-Jan-2019 | ✓ |
| EA006: Sodium Adsorption Ratio (SAR) | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
MW03_23/1/19, GW05_23/1/19, MW10_23/1/19, MW11_23/1/19, QC301_23/1/19, MW02_23/1/19, QC101_23/1/19, MW09_23/1/19, MW15_23/1/19, QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 20-Feb-2019 | ✓ |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
QC304_24/1/19, MW14_24/1/19, GW04_24/1/19, MW07_24/1/19 | 24-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 21-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|--|--------------------------|--------------------|------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA010P: Conductivity by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (EA010-P)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 20-Feb-2019 | ✓ |
| Clear Plastic Bottle - Natural (EA010-P)
QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | 24-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 21-Feb-2019 | ✓ |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C | | | | | | | | |
| Clear Plastic Bottle - Natural (EA015H)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 30-Jan-2019 | ✓ |
| Clear Plastic Bottle - Natural (EA015H)
QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | 24-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 31-Jan-2019 | ✓ |
| EA065: Total Hardness as CaCO3 | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 20-Feb-2019 | ✓ |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | 24-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 21-Feb-2019 | ✓ |
| ED037P: Alkalinity by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (ED037-P)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 06-Feb-2019 | ✓ |
| Clear Plastic Bottle - Natural (ED037-P)
QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | 24-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 07-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | |
| Clear Plastic Bottle - Natural (ED041G) | | 23-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 20-Feb-2019 | ✓ |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | | | | | | | |
| Clear Plastic Bottle - Natural (ED041G) | | 24-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 21-Feb-2019 | ✓ |
| QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | | | | | | | |
| ED045G: Chloride by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Natural (ED045G) | | 23-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 20-Feb-2019 | ✓ |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | | | | | | | |
| Clear Plastic Bottle - Natural (ED045G) | | 24-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 21-Feb-2019 | ✓ |
| QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | | | | | | | |
| ED093F: Dissolved Major Cations | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) | | 23-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 20-Feb-2019 | ✓ |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) | | 24-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 21-Feb-2019 | ✓ |
| QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | | | | | | | |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) | | 23-Jan-2019 | ---- | ---- | ---- | 30-Jan-2019 | 22-Jul-2019 | ✓ |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) | | 24-Jan-2019 | ---- | ---- | ---- | 30-Jan-2019 | 23-Jul-2019 | ✓ |
| QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | | | | | | | |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 31-Jan-2019 | 20-Feb-2019 | ✓ |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | 24-Jan-2019 | ---- | ---- | ---- | 31-Jan-2019 | 21-Feb-2019 | ✓ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | |
| Clear Plastic Bottle - NaOH (EG050F)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 20-Feb-2019 | ✓ |
| Clear Plastic Bottle - NaOH (EG050F)
QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | 24-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 21-Feb-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 20-Feb-2019 | ✓ |
| Clear Plastic Bottle - Natural (EK040P)
QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | 24-Jan-2019 | ---- | ---- | ---- | 29-Jan-2019 | 21-Feb-2019 | ✓ |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Sulfuric Acid (EK055G)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 20-Feb-2019 | ✓ |
| Clear Plastic Bottle - Sulfuric Acid (EK055G)
QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | 24-Jan-2019 | ---- | ---- | ---- | 01-Feb-2019 | 21-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Natural (EK057G)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 25-Jan-2019 | 25-Jan-2019 | ✓ |
| Clear Plastic Bottle - Natural (EK057G)
QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | ---- | ---- | ---- | 25-Jan-2019 | 26-Jan-2019 | ✓ |
| Clear Plastic Bottle - Natural (EK057G)
MW07_24/1/19 | | 24-Jan-2019 | ---- | ---- | ---- | 30-Jan-2019 | 26-Jan-2019 | ✗ |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Sulfuric Acid (EK059G)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 31-Jan-2019 | 20-Feb-2019 | ✓ |
| Clear Plastic Bottle - Sulfuric Acid (EK059G)
QC304_24/1/19,
MW14_24/1/19, | GW04_24/1/19,
MW07_24/1/19 | 24-Jan-2019 | ---- | ---- | ---- | 31-Jan-2019 | 21-Feb-2019 | ✓ |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Sulfuric Acid (EK061G)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 20-Feb-2019 | ✓ | 29-Jan-2019 | 20-Feb-2019 | ✓ |
| Clear Plastic Bottle - Sulfuric Acid (EK061G)
QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 21-Feb-2019 | ✓ | 29-Jan-2019 | 21-Feb-2019 | ✓ |
| Clear Plastic Bottle - Sulfuric Acid (EK061G)
MW07_24/1/19 | | 24-Jan-2019 | 30-Jan-2019 | 21-Feb-2019 | ✓ | 30-Jan-2019 | 21-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | |
| Clear Plastic Bottle - Sulfuric Acid (EK067G)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 20-Feb-2019 | ✓ | 29-Jan-2019 | 20-Feb-2019 | ✓ |
| Clear Plastic Bottle - Sulfuric Acid (EK067G)
QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 21-Feb-2019 | ✓ | 29-Jan-2019 | 21-Feb-2019 | ✓ |
| Clear Plastic Bottle - Sulfuric Acid (EK067G)
MW07_24/1/19 | | 24-Jan-2019 | 30-Jan-2019 | 21-Feb-2019 | ✓ | 30-Jan-2019 | 21-Feb-2019 | ✓ |
| EK071G: Reactive Phosphorus as P by discrete analyser | | | | | | | | |
| Clear Plastic Bottle - Natural (EK071G)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | ---- | ---- | ---- | 25-Jan-2019 | 25-Jan-2019 | ✓ |
| Clear Plastic Bottle - Natural (EK071G)
QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | ---- | ---- | ---- | 25-Jan-2019 | 26-Jan-2019 | ✓ |
| Clear Plastic Bottle - Natural (EK071G)
MW07_24/1/19 | | 24-Jan-2019 | ---- | ---- | ---- | 30-Jan-2019 | 26-Jan-2019 | ✗ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 06-Feb-2019 | ✓ | 29-Jan-2019 | 06-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW07_24/1/19 | | 24-Jan-2019 | 01-Feb-2019 | 07-Feb-2019 | ✓ | 01-Feb-2019 | 07-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP074B: Oxygenated Compounds | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 06-Feb-2019 | ✓ | 29-Jan-2019 | 06-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW07_24/1/19 | | 24-Jan-2019 | 01-Feb-2019 | 07-Feb-2019 | ✓ | 01-Feb-2019 | 07-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |
| EP074C: Sulfonated Compounds | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 06-Feb-2019 | ✓ | 29-Jan-2019 | 06-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW07_24/1/19 | | 24-Jan-2019 | 01-Feb-2019 | 07-Feb-2019 | ✓ | 01-Feb-2019 | 07-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |
| EP074D: Fumigants | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 06-Feb-2019 | ✓ | 29-Jan-2019 | 06-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW07_24/1/19 | | 24-Jan-2019 | 01-Feb-2019 | 07-Feb-2019 | ✓ | 01-Feb-2019 | 07-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Evaluation | Analysis | | |
|---|--|-------------|--------------------------|--------------------|---|-------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | | | Date analysed | Due for analysis | Evaluation |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW03_23/1/19, MW02_23/1/19,
GW05_23/1/19, QC101_23/1/19,
MW10_23/1/19, MW09_23/1/19,
MW11_23/1/19, MW15_23/1/19,
QC301_23/1/19, QC302_23/1/19 | | 23-Jan-2019 | 29-Jan-2019 | 06-Feb-2019 | ✓ | 29-Jan-2019 | 06-Feb-2019 | ✓ | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW07_24/1/19 | | 24-Jan-2019 | 01-Feb-2019 | 07-Feb-2019 | ✓ | 01-Feb-2019 | 07-Feb-2019 | ✓ | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC304_24/1/19, GW04_24/1/19,
MW14_24/1/19 | | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ | |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW03_23/1/19, MW02_23/1/19,
GW05_23/1/19, QC101_23/1/19,
MW10_23/1/19, MW09_23/1/19,
MW11_23/1/19, MW15_23/1/19,
QC301_23/1/19, QC302_23/1/19 | | 23-Jan-2019 | 29-Jan-2019 | 06-Feb-2019 | ✓ | 29-Jan-2019 | 06-Feb-2019 | ✓ | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW07_24/1/19 | | 24-Jan-2019 | 01-Feb-2019 | 07-Feb-2019 | ✓ | 01-Feb-2019 | 07-Feb-2019 | ✓ | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC304_24/1/19, GW04_24/1/19,
MW14_24/1/19 | | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ | |
| EP074G: Trihalomethanes | | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW03_23/1/19, MW02_23/1/19,
GW05_23/1/19, QC101_23/1/19,
MW10_23/1/19, MW09_23/1/19,
MW11_23/1/19, MW15_23/1/19,
QC301_23/1/19, QC302_23/1/19 | | 23-Jan-2019 | 29-Jan-2019 | 06-Feb-2019 | ✓ | 29-Jan-2019 | 06-Feb-2019 | ✓ | |
| Amber VOC Vial - Sulfuric Acid (EP074)
MW07_24/1/19 | | 24-Jan-2019 | 01-Feb-2019 | 07-Feb-2019 | ✓ | 01-Feb-2019 | 07-Feb-2019 | ✓ | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC304_24/1/19, GW04_24/1/19,
MW14_24/1/19 | | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ | |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075A: Phenolic Compounds | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW07_24/1/19 | | 24-Jan-2019 | 25-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 06-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW07_24/1/19 | | 24-Jan-2019 | 25-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 06-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075C: Phthalate Esters | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW07_24/1/19 | | 24-Jan-2019 | 25-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 06-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075D: Nitrosamines | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW07_24/1/19 | | 24-Jan-2019 | 25-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 06-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075E: Nitroaromatics and Ketones | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW07_24/1/19 | | 24-Jan-2019 | 25-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 06-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075F: Haloethers | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW07_24/1/19 | | 24-Jan-2019 | 25-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 06-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075G: Chlorinated Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW07_24/1/19 | | 24-Jan-2019 | 25-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 06-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075H: Anilines and Benzidines | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW07_24/1/19 | | 24-Jan-2019 | 25-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 06-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| MW07_24/1/19 | | 24-Jan-2019 | 25-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 06-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075) | | | | | | | | |
| QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075J: Organophosphorus Pesticides | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075)
MW07_24/1/19 | | 24-Jan-2019 | 25-Jan-2019 | 31-Jan-2019 | ✓ | 31-Jan-2019 | 06-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP075)
QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP071)
QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19,
QC401_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19,
QC402_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 06-Feb-2019 | ✓ | 29-Jan-2019 | 06-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC304_24/1/19,
GW04_24/1/19, | QC403_24/1/19,
MW14_24/1/19 | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071) | | | | | | | | |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 30-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber Glass Bottle - Unpreserved (EP071) | | | | | | | | |
| QC304_24/1/19,
MW14_24/1/19 | GW04_24/1/19, | 24-Jan-2019 | 29-Jan-2019 | 31-Jan-2019 | ✓ | 30-Jan-2019 | 10-Mar-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080) | | | | | | | | |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19,
QC401_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19,
QC402_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 06-Feb-2019 | ✓ | 29-Jan-2019 | 06-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080) | | | | | | | | |
| QC304_24/1/19,
GW04_24/1/19, | QC403_24/1/19,
MW14_24/1/19 | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |
| EP080: BTEXN | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080) | | | | | | | | |
| MW03_23/1/19,
GW05_23/1/19,
MW10_23/1/19,
MW11_23/1/19,
QC301_23/1/19,
QC401_23/1/19, | MW02_23/1/19,
QC101_23/1/19,
MW09_23/1/19,
MW15_23/1/19,
QC302_23/1/19,
QC402_23/1/19 | 23-Jan-2019 | 29-Jan-2019 | 06-Feb-2019 | ✓ | 29-Jan-2019 | 06-Feb-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080) | | | | | | | | |
| QC304_24/1/19,
GW04_24/1/19, | QC403_24/1/19,
MW14_24/1/19 | 24-Jan-2019 | 29-Jan-2019 | 07-Feb-2019 | ✓ | 29-Jan-2019 | 07-Feb-2019 | ✓ |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL) | | | | | | | | |
| GW05_23/1/19,
QC301_23/1/19 | QC101_23/1/19, | 23-Jan-2019 | 29-Jan-2019 | 22-Jul-2019 | ✓ | 29-Jan-2019 | 22-Jul-2019 | ✓ |
| HDPE (no PTFE) (EP231X-LL) | | | | | | | | |
| GW04_24/1/19 | | 24-Jan-2019 | 29-Jan-2019 | 23-Jul-2019 | ✓ | 29-Jan-2019 | 23-Jul-2019 | ✓ |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL) | | | | | | | | |
| GW05_23/1/19,
QC301_23/1/19 | QC101_23/1/19, | 23-Jan-2019 | 29-Jan-2019 | 22-Jul-2019 | ✓ | 29-Jan-2019 | 22-Jul-2019 | ✓ |
| HDPE (no PTFE) (EP231X-LL) | | | | | | | | |
| GW04_24/1/19 | | 24-Jan-2019 | 29-Jan-2019 | 23-Jul-2019 | ✓ | 29-Jan-2019 | 23-Jul-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|----------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL)
GW05_23/1/19,
QC301_23/1/19 | QC101_23/1/19, | 23-Jan-2019 | 29-Jan-2019 | 22-Jul-2019 | ✓ | 29-Jan-2019 | 22-Jul-2019 | ✓ |
| HDPE (no PTFE) (EP231X-LL)
GW04_24/1/19 | | 24-Jan-2019 | 29-Jan-2019 | 23-Jul-2019 | ✓ | 29-Jan-2019 | 23-Jul-2019 | ✓ |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL)
GW05_23/1/19,
QC301_23/1/19 | QC101_23/1/19, | 23-Jan-2019 | 29-Jan-2019 | 22-Jul-2019 | ✓ | 29-Jan-2019 | 22-Jul-2019 | ✓ |
| HDPE (no PTFE) (EP231X-LL)
GW04_24/1/19 | | 24-Jan-2019 | 29-Jan-2019 | 23-Jul-2019 | ✓ | 29-Jan-2019 | 23-Jul-2019 | ✓ |
| EP231P: PFAS Sums | | | | | | | | |
| HDPE (no PTFE) (EP231X-LL)
GW05_23/1/19,
QC301_23/1/19 | QC101_23/1/19, | 23-Jan-2019 | 29-Jan-2019 | 22-Jul-2019 | ✓ | 29-Jan-2019 | 22-Jul-2019 | ✓ |
| HDPE (no PTFE) (EP231X-LL)
GW04_24/1/19 | | 24-Jan-2019 | 29-Jan-2019 | 23-Jul-2019 | ✓ | 29-Jan-2019 | 23-Jul-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|-----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Alkalinity by PC Titrator | ED037-P | 3 | 28 | 10.71 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Ammonia as N by Discrete analyser | EK055G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Conductivity by PC Titrator | EA010-P | 3 | 27 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 4 | 33 | 12.12 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 3 | 28 | 10.71 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 2 | 14 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Major Cations - Dissolved | ED093F | 4 | 35 | 11.43 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 4 | 36 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS | EP231X-LL | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 3 | 25 | 12.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 3 | 24 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 1 | 15 | 6.67 | 10.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Dissolved Solids (High Level) | EA015H | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 6 | 60 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 6 | 60 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 20 | 0.00 | 10.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 4 | 25 | 16.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Alkalinity by PC Titrator | ED037-P | 2 | 28 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Ammonia as N by Discrete analyser | EK055G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Conductivity by PC Titrator | EA010-P | 2 | 27 | 7.41 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 33 | 6.06 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 2 | 28 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Major Cations - Dissolved | ED093F | 2 | 35 | 5.71 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 2 | 36 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS | EP231X-LL | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 2 | 24 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | Quality Control Specification | |
|--|-----------|-------|---------|----------|----------|-------------------------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | | Evaluation |
| | | | | | | | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| Semivolatile Organic Compounds | EP075 | 2 | 15 | 13.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Dissolved Solids (High Level) | EA015H | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 3 | 60 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 3 | 60 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 2 | 25 | 8.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Ammonia as N by Discrete analyser | EK055G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Conductivity by PC Titrator | EA010-P | 2 | 27 | 7.41 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 33 | 6.06 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 2 | 28 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Major Cations - Dissolved | ED093F | 2 | 35 | 5.71 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 2 | 36 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS | EP231X-LL | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 2 | 24 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 2 | 15 | 13.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Dissolved Solids (High Level) | EA015H | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 3 | 60 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 3 | 60 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 2 | 25 | 8.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Ammonia as N by Discrete analyser | EK055G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 2 | 33 | 6.06 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 2 | 28 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 2 | 36 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS | EP231X-LL | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 2 | 24 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|--------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Matrix Spikes (MS) - Continued | | | | | | | |
| Semivolatile Organic Compounds | EP075 | 0 | 15 | 0.00 | 5.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 2 | 40 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 3 | 60 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 3 | 60 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 20 | 0.00 | 5.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 2 | 25 | 8.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|--|----------|--------|---|
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Conductivity by PC Titrator | EA010-P | WATER | In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Dissolved Solids (High Level) | EA015H | WATER | In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3) |
| Calculated TDS (from Electrical Conductivity) | EA016 | WATER | In house: Calculation from Electrical Conductivity (APHA 2510 B) using a conversion factor specified in the analytical report. This method is compliant with NEPM (2013) Schedule B(3) |
| Alkalinity by PC Titrator | ED037-P | WATER | In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3) |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | WATER | In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Chloride by Discrete Analyser | ED045G | WATER | In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003 |
| Major Cations - Dissolved | ED093F | WATER | In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)

Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)

Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |



| Analytical Methods | Method | Matrix | Method Descriptions |
|--|------------|--------|---|
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Ammonia as N by Discrete analyser | EK055G | WATER | In house: Referenced to APHA 4500-NH ₃ G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Nitrite as N by Discrete Analyser | EK057G | WATER | In house: Referenced to APHA 4500-NO ₂ - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Nitrate as N by Discrete Analyser | EK058G | WATER | In house: Referenced to APHA 4500-NO ₃ - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3) |
| Nitrite and Nitrate as N (NO _x) by Discrete Analyser | EK059G | WATER | In house: Referenced to APHA 4500-NO ₃ - F. Combined oxidised Nitrogen (NO ₂ +NO ₃) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | WATER | In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Nitrogen as N (TKN + Nox) By Discrete Analyser | EK062G | WATER | In house: Referenced to APHA 4500-Norg / 4500-NO ₃ -. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Phosphorus as P By Discrete Analyser | EK067G | WATER | In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | WATER | In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Ionic Balance by PCT DA and Turbi SO ₄ DA | EN055 - PG | WATER | In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|--|
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds | EP075 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Per- and Polyfluoroalkyl Substances (PFAS by LCMSMS) | EP231X-LL | WATER | In-house: Analysis of fresh and saline waters by solid phase extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1 |

| Preparation Methods | Method | Matrix | Method Descriptions |
|---|-------------|--------|---|
| TKN/TP Digestion | EK061/EK067 | WATER | In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3) |
| SPE preparation for LL and saline PFCs | EP231-SPE | WATER | In house |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1900976 | Page | : 1 of 36 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 24-Jan-2019 |
| Order number | : 60592634 Task 1.0 | Date Analysis Commenced | : 24-Jan-2019 |
| C-O-C number | : ---- | Issue Date | : 05-Feb-2019 |
| Sampler | : [REDACTED] | | |
| Site | : GIJPP | | |
| Quote number | : EN/004/16 | | |
| No. of samples received | : 17 | | |
| No. of samples analysed | : 17 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□ □ □ □ □ □ □ □

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□ □ □ □ □ □ □ □

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

□ □ □ □ □ □ □ □

Senior Inorganic Chemist
Metals Team Leader

Senior Inorganic Instrument Chemist
Senior Organic Chemist

□ □ □ □ □ □ □ □ □ □ □ □

Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Sydney Organics, Smithfield, NSW
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2158444) | | | | | | | | | |
| EM1900970-002 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 6.75 | 6.79 | 0.591 | 0% - 20% |
| EM1900976-009 | QC301_23/1/19 | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.12 | 7.12 | 0.00 | 0% - 20% |
| EA005P: pH by PC Titrator (QC Lot: 2158449) | | | | | | | | | |
| EM1900976-016 | MW14_24/1/19 | EA005-P: pH Value | ---- | 0.01 | pH Unit | 6.86 | 7.65 | 10.9 | 0% - 20% |
| EA010P: Conductivity by PC Titrator (QC Lot: 2158442) | | | | | | | | | |
| EM1900940-015 | Anonymous | EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | 5920 | 5920 | 0.00 | 0% - 20% |
| EM1900970-002 | Anonymous | EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | 1050 | 1050 | 0.00 | 0% - 20% |
| EA010P: Conductivity by PC Titrator (QC Lot: 2158446) | | | | | | | | | |
| EM1900976-009 | QC301_23/1/19 | EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | 2 | 2 | 0.00 | No Limit |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 2158171) | | | | | | | | | |
| EM1900976-003 | GW05_23/1/19 | EA015H: Total Dissolved Solids @180°C | ---- | 10 | mg/L | 5050 | 4940 | 2.08 | 0% - 20% |
| EM1900896-001 | Anonymous | EA015H: Total Dissolved Solids @180°C | ---- | 10 | mg/L | 2110 | 2210 | 4.58 | 0% - 20% |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 2158172) | | | | | | | | | |
| EM1900976-017 | MW07_24/1/19 | EA015H: Total Dissolved Solids @180°C | ---- | 10 | mg/L | 1120 | 1090 | 2.90 | 0% - 20% |
| EM1900980-012 | Anonymous | EA015H: Total Dissolved Solids @180°C | ---- | 10 | mg/L | 5580 | 5120 | 8.48 | 0% - 20% |
| ED037P: Alkalinity by PC Titrator (QC Lot: 2158445) | | | | | | | | | |
| EM1900966-001 | Anonymous | ED037-P: Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 485 | 482 | 0.658 | 0% - 20% |
| | | ED037-P: Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 485 | 482 | 0.658 | 0% - 20% |
| EM1900970-002 | Anonymous | ED037-P: Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 64 | 63 | 0.00 | 0% - 20% |
| | | ED037-P: Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 64 | 63 | 0.00 | 0% - 20% |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|-------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| ED037P: Alkalinity by PC Titrator (QC Lot: 2158448) | | | | | | | | | |
| EM1900976-009 | QC301_23/1/19 | ED037-P: Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 1 | <1 | 0.00 | No Limit |
| | | ED037-P: Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 1 | <1 | 0.00 | No Limit |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 2155903) | | | | | | | | | |
| EM1900976-007 | MW11_23/1/19 | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | 1170 | 1150 | 1.52 | 0% - 20% |
| EM1900955-003 | Anonymous | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | 3980 | 4020 | 0.837 | 0% - 20% |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 2158229) | | | | | | | | | |
| EM1900947-001 | Anonymous | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | 1460 | 1440 | 1.82 | 0% - 20% |
| EM1900980-010 | Anonymous | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| ED045G: Chloride by Discrete Analyser (QC Lot: 2155904) | | | | | | | | | |
| EM1900976-006 | MW09_23/1/19 | ED045G: Chloride | 16887-00-6 | 1 | mg/L | 7590 | 7520 | 0.886 | 0% - 20% |
| EM1900955-003 | Anonymous | ED045G: Chloride | 16887-00-6 | 1 | mg/L | 32000 | 32600 | 1.84 | 0% - 20% |
| ED045G: Chloride by Discrete Analyser (QC Lot: 2158230) | | | | | | | | | |
| EM1900955-001 | Anonymous | ED045G: Chloride | 16887-00-6 | 1 | mg/L | 1900 | 1920 | 1.20 | 0% - 20% |
| EM1900986-032 | Anonymous | ED045G: Chloride | 16887-00-6 | 1 | mg/L | 2040 | 2000 | 2.46 | 0% - 20% |
| ED093F: Dissolved Major Cations (QC Lot: 2160601) | | | | | | | | | |
| EM1900966-002 | Anonymous | ED093F: Calcium | 7440-70-2 | 1 | mg/L | 1 | 1 | 0.00 | No Limit |
| | | ED093F: Magnesium | 7439-95-4 | 1 | mg/L | 10 | 10 | 0.00 | No Limit |
| | | ED093F: Sodium | 7440-23-5 | 1 | mg/L | 392 | 392 | 0.00 | 0% - 20% |
| | | ED093F: Potassium | 7440-09-7 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| EM1900976-002 | MW02_23/1/19 | ED093F: Calcium | 7440-70-2 | 1 | mg/L | 81 | 82 | 1.37 | 0% - 20% |
| | | ED093F: Magnesium | 7439-95-4 | 1 | mg/L | 65 | 66 | 0.00 | 0% - 20% |
| | | ED093F: Sodium | 7440-23-5 | 1 | mg/L | 609 | 617 | 1.35 | 0% - 20% |
| | | ED093F: Potassium | 7440-09-7 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| ED093F: Dissolved Major Cations (QC Lot: 2160602) | | | | | | | | | |
| EM1900976-017 | MW07_24/1/19 | ED093F: Calcium | 7440-70-2 | 1 | mg/L | 16 | 16 | 0.00 | 0% - 50% |
| | | ED093F: Magnesium | 7439-95-4 | 1 | mg/L | 6 | 6 | 0.00 | No Limit |
| | | ED093F: Sodium | 7440-23-5 | 1 | mg/L | 266 | 265 | 0.425 | 0% - 20% |
| | | ED093F: Potassium | 7440-09-7 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| EM1901029-004 | Anonymous | ED093F: Calcium | 7440-70-2 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED093F: Magnesium | 7439-95-4 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED093F: Sodium | 7440-23-5 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED093F: Potassium | 7440-09-7 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2160599) | | | | | | | | | |
| EM1900966-001 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0010 | <0.0010 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.010 | <0.010 | 0.00 | No Limit |
| | | EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | <0.010 | <0.010 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.010 | 0.014 | 33.7 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2160599) - continued | | | | | | | | | |
| EM1900966-001 | Anonymous | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.010 | <0.010 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.010 | 0.012 | 15.3 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.050 | 0.105 | 71.1 | No Limit |
| | | EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | 0.60 | 0.57 | 4.21 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.10 | <0.10 | 0.00 | No Limit |
| | | EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | <0.50 | <0.50 | 0.00 | No Limit |
| EM1900976-002 | MW02_23/1/19 | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.005 | 0.005 | 0.00 | No Limit |
| | | EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.008 | 0.008 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.061 | 0.059 | 2.56 | 0% - 50% |
| | | EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | 0.01 | 0.01 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | 1.00 | 1.02 | 1.60 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2160603) | | | | | | | | | |
| EM1900976-016 | MW14_24/1/19 | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.007 | 0.008 | 0.00 | No Limit |
| | | EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.002 | 0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.004 | 0.004 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.044 | 0.044 | 0.00 | No Limit |
| | | EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | 0.03 | 0.02 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | 0.74 | 0.77 | 4.62 | 0% - 50% |
| EM1901029-004 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2160600) | | | | | | | | | |
| EM1900976-004 | QC101_23/1/19 | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1900966-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0010 | <0.0010 | 0.00 | No Limit |

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2159543) | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900976-010 | QC302_23/1/19 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2158435) | | | | | | | | | |
| EM1900918-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.6 | 0.7 | 0.00 | No Limit |
| EM1900919-003 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.7 | 0.7 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2158447) | | | | | | | | | |
| EM1900976-009 | QC301_23/1/19 | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EK055G: Ammonia as N by Discrete Analyser (QC Lot: 2161847) | | | | | | | | | |
| EM1900959-009 | Anonymous | EK055G: Ammonia as N | 7664-41-7 | 0.01 | mg/L | 0.10 | 0.10 | 0.00 | No Limit |
| EM1900976-009 | QC301_23/1/19 | EK055G: Ammonia as N | 7664-41-7 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK057G: Nitrite as N by Discrete Analyser (QC Lot: 2155905) | | | | | | | | | |
| EM1900976-006 | MW09_23/1/19 | EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900955-003 | Anonymous | EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK057G: Nitrite as N by Discrete Analyser (QC Lot: 2158232) | | | | | | | | | |
| EM1901035-005 | Anonymous | EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900976-017 | MW07_24/1/19 | EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2161846) | | | | | | | | | |
| EM1900955-003 | Anonymous | EK059G: Nitrite + Nitrate as N | ---- | 0.01 | mg/L | <0.01 | 0.02 | 0.00 | No Limit |
| EM1900976-006 | MW09_23/1/19 | EK059G: Nitrite + Nitrate as N | ---- | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 2155680) | | | | | | | | | |
| EM1900940-015 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 0.9 | 0.9 | 0.00 | No Limit |
| EM1900966-009 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 2.0 | 1.7 | 17.1 | 0% - 20% |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 2155683) | | | | | | | | | |
| EM1900976-003 | GW05_23/1/19 | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 1.2 | 1.2 | 0.00 | 0% - 50% |
| EM1900976-015 | GW04_24/1/19 | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 1.2 | 1.3 | 8.40 | 0% - 50% |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 2159102) | | | | | | | | | |
| EM1900976-017 | MW07_24/1/19 | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 1.4 | 1.4 | 0.00 | 0% - 50% |
| EM1900986-009 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 0.2 | 0.2 | 0.00 | No Limit |
| EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 2155681) | | | | | | | | | |
| EM1900940-015 | Anonymous | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 0.20 | 0.16 | 20.0 | 0% - 20% |
| EM1900966-009 | Anonymous | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 0.10 | 0.06 | 47.6 | 0% - 50% |
| EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 2155682) | | | | | | | | | |
| EM1900976-003 | GW05_23/1/19 | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 0.26 | 0.25 | 0.00 | 0% - 20% |
| EM1900976-015 | GW04_24/1/19 | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 0.40 | 0.40 | 0.00 | 0% - 20% |
| EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 2159101) | | | | | | | | | |
| EM1900976-017 | MW07_24/1/19 | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 0.45 | 0.44 | 2.51 | 0% - 20% |
| EM1900986-009 | Anonymous | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 0.17 | 0.17 | 0.00 | 0% - 50% |
| EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 2155906) | | | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|----------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 2155906) - continued | | | | | | | | | |
| EM1900976-009 | QC301_23/1/19 | EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1900956-001 | Anonymous | EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | 0.04 | 0.03 | 0.00 | No Limit |
| EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 2158231) | | | | | | | | | |
| EM1900976-017 | MW07_24/1/19 | EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2158105) | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EP074: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP074: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900976-013 | QC304_24/1/19 | EP074: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP074: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP074: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2164819) - continued | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.3.5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901225-001 | Anonymous | EP074: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP074: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.3.5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| EP074B: Oxygenated Compounds (QC Lot: 2158105) | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EM1900976-013 | QC304_24/1/19 | EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074B: Oxygenated Compounds (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074B: Oxygenated Compounds (QC Lot: 2164819) - continued | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EM1901225-001 | Anonymous | EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074C: Sulfonated Compounds (QC Lot: 2158105) | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900976-013 | QC304_24/1/19 | EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074C: Sulfonated Compounds (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901225-001 | Anonymous | EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074D: Fumigants (QC Lot: 2158105) | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EP074: 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900976-013 | QC304_24/1/19 | EP074: 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074D: Fumigants (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901225-001 | Anonymous | EP074: 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2158105) | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2158105) - continued | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EM1900976-013 | QC304_24/1/19 | EP074: 1.1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2158105) - continued | | | | | | | | | |
| EM1900976-013 | QC304_24/1/19 | EP074: 1.2.3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: 1.1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EM1901225-001 | Anonymous | EP074: 1.1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2164819) - continued | | | | | | | | | |
| EM1901225-001 | Anonymous | EP074: 1.1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2158105) | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900976-013 | QC304_24/1/19 | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2164819) - continued | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: 1,2,3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901225-001 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1,2,3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2158105) | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900976-013 | QC304_24/1/19 | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2164819) | | | | | | | | | |
| EM1901196-002 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1901225-001 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (QC Lot: 2155490) | | | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP075: Phenol | 108-95-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2-Methylphenol | 95-48-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 3- & 4-Methylphenol | 1319-77-3 | 2 | µg/L | <4 | <4 | 0.00 | No Limit |
| | | EP075: 2-Nitrophenol | 88-75-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Pentachlorophenol | 87-86-5 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2155490) | | | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP075: Napthalene | 91-20-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|----------------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2155490) - continued | | | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP075: 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Acenaphthylene | 208-96-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Acenaphthene | 83-32-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Fluorene | 86-73-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Phenanthrene | 85-01-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Anthracene | 120-12-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Fluoranthene | 206-44-0 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Pyrene | 129-00-0 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Benz(a)anthracene | 56-55-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Chrysene | 218-01-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 7.12-Dimethylbenz(a)anthracene | 57-97-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Benzo(a)pyrene | 50-32-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Indeno(1.2.3.cd)pyrene | 193-39-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Dibenzo(a,h)anthracene | 53-70-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Benzo(g,h,i)perylene | 191-24-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Benzo(a)pyrene TEQ (zero) | ---- | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075C: Phthalate Esters (QC Lot: 2155490) | | | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP075: bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | <10 | <10 | 0.00 | No Limit |
| | | EP075: Dimethyl phthalate | 131-11-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Diethyl phthalate | 84-66-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Di-n-octylphthalate | 117-84-0 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EP075D: Nitrosamines (QC Lot: 2155490) | | | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP075: N-Nitrosomethylethylamine | 10595-95-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-Nitrosodiethylamine | 55-18-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-Nitrosomorpholine | 59-89-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-Nitrosodi-n-propylamine | 621-64-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-Nitrosopiperidine | 100-75-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-Nitrosodibutylamine | 924-16-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Methapyrilene | 91-80-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: N-Nitrosopyrrolidine | 930-55-2 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| | | EP075: N-Nitrosodiphenyl & Diphenylamine | 86-30-6
122-39-4 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075E: Nitroaromatics and Ketones (QC Lot: 2155490) | | | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075E: Nitroaromatics and Ketones (QC Lot: 2155490) - continued | | | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP075: 2-Picoline | 109-06-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Acetophenone | 98-86-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Nitrobenzene | 98-95-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Isophorone | 78-59-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 1-Naphthylamine | 134-32-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Nitroquinoline-N-oxide | 56-57-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 5-Nitro-o-toluidine | 99-55-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Azobenzene | 103-33-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 1.3.5-Trinitrobenzene | 99-35-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Phenacetin | 62-44-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Aminobiphenyl | 92-67-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Pentachloronitrobenzene | 82-68-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Pronamide | 23950-58-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Dimethylaminoazobenzene | 60-11-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Chlorobenzilate | 510-15-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 2.6-Dinitrotoluene | 606-20-2 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075: 2.4-Dinitrotoluene | 121-14-2 | 4 | µg/L | <4 | <4 | 0.00 | No Limit | | |
| EP075F: Haloethers (QC Lot: 2155490) | | | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP075: Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EP075G: Chlorinated Hydrocarbons (QC Lot: 2155490) | | | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP075: Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | <10 | <10 | 0.00 | No Limit |
| | | EP075: 1.4-Dichlorobenzene | 106-46-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 1.3-Dichlorobenzene | 541-73-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 1.2-Dichlorobenzene | 95-50-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Hexachloroethane | 67-72-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 1.2.4-Trichlorobenzene | 120-82-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Hexachloropropylene | 1888-71-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Hexachlorobutadiene | 87-68-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Pentachlorobenzene | 608-93-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075H: Anilines and Benzidines (QC Lot: 2155490) | | | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP075: Aniline | 62-53-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Chloroaniline | 106-47-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Dibenzofuran | 132-64-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4-Nitroaniline | 100-01-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Carbazole | 86-74-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 3.3`-Dichlorobenzidine | 91-94-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075H: Anilines and Benzidines (QC Lot: 2155490) - continued | | | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP075: 2-Nitroaniline | 88-74-4 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| | | EP075: 3-Nitroaniline | 99-09-2 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2155490) | | | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP075: alpha-BHC | 319-84-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: beta-BHC | 319-85-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: gamma-BHC | 58-89-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: delta-BHC | 319-86-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Heptachlor | 76-44-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Aldrin | 309-00-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Heptachlor epoxide | 1024-57-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: alpha-Endosulfan | 959-98-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4,4'-DDE | 72-55-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Dieldrin | 60-57-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Endrin | 72-20-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: beta-Endosulfan | 33213-65-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4,4'-DDD | 72-54-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Endosulfan sulfate | 1031-07-8 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: 4,4'-DDT | 50-29-3 | 4 | µg/L | <4 | <4 | 0.00 | No Limit |
| EP075J: Organophosphorus Pesticides (QC Lot: 2155490) | | | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP075: Dichlorvos | 62-73-7 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Dimethoate | 60-51-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Diazinon | 333-41-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Malathion | 121-75-5 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Fenthion | 55-38-9 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Chlorpyrifos | 2921-88-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Chlorfenvinphos | 470-90-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Prothiofos | 34643-46-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP075: Ethion | 563-12-2 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2158106) | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900976-013 | QC304_24/1/19 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2158106) | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1900976-013 | QC304_24/1/19 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2158106) | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|----------------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080: BTEXN (QC Lot: 2158106) - continued | | | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1900976-013 | QC304_24/1/19 | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2158354) | | | | | | | |
| EM1900940-001 | Anonymous | EP231X-LL: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.002 | µg/L | 0.062 | 0.064 | 2.99 | 0% - 20% |
| | | EP231X-LL: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.002 | µg/L | 0.048 | 0.051 | 5.86 | 0% - 20% |
| | | EP231X-LL: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.002 | µg/L | 0.238 | 0.248 | 3.95 | 0% - 20% |
| | | EP231X-LL: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.002 | µg/L | 0.023 | 0.024 | 0.00 | 0% - 50% |
| | | EP231X-LL: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.002 | µg/L | 0.286 | 0.291 | 1.73 | 0% - 20% |
| | | EP231X-LL: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| EM1900940-015 | Anonymous | EP231X-LL: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.002 | µg/L | 0.119 | 0.112 | 6.06 | 0% - 20% |
| | | EP231X-LL: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.002 | µg/L | 0.071 | 0.070 | 1.42 | 0% - 20% |
| | | EP231X-LL: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.002 | µg/L | 0.273 | 0.271 | 0.552 | 0% - 20% |
| | | EP231X-LL: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.002 | µg/L | 0.015 | 0.015 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.002 | µg/L | 0.132 | 0.123 | 7.06 | 0% - 20% |
| | | EP231X-LL: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2158354) | | | | | | | | | |
| EM1900940-001 | Anonymous | EP231X-LL: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.002 | µg/L | 0.023 | 0.023 | 0.00 | 0% - 50% |
| | | EP231X-LL: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.002 | µg/L | 0.016 | 0.017 | 7.41 | No Limit |
| | | EP231X-LL: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.002 | µg/L | 0.012 | 0.013 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.002 | µg/L | 0.204 | 0.206 | 1.17 | 0% - 20% |
| | | EP231X-LL: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.002 | µg/L | 0.014 | 0.015 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2158354) - continued | | | | | | | | | |
| EM1900940-001 | Anonymous | EP231X-LL: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.01 | µg/L | 0.06 | 0.05 | 0.00 | No Limit |
| EM1900940-015 | Anonymous | EP231X-LL: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.002 | µg/L | 0.074 | 0.077 | 3.97 | 0% - 20% |
| | | EP231X-LL: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.002 | µg/L | 0.100 | 0.105 | 4.88 | 0% - 20% |
| | | EP231X-LL: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.002 | µg/L | 0.050 | 0.050 | 0.00 | 0% - 20% |
| | | EP231X-LL: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.002 | µg/L | 0.214 | 0.211 | 1.41 | 0% - 20% |
| | | EP231X-LL: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.002 | µg/L | 0.007 | 0.006 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2158354) | | | | | | | |
| EM1900940-001 | Anonymous | EP231X-LL: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| EM1900940-015 | Anonymous | EP231X-LL: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|-------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2158354) - continued | | | | | | | | | |
| EM1900940-015 | Anonymous | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.002 | µg/L | <0.002 | <0.002 | 0.00 | No Limit |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2158354) | | | | | | | | | |
| EM1900940-001 | Anonymous | EP231X-LL: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| EM1900940-015 | Anonymous | EP231X-LL: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EP231X-LL: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.005 | µg/L | <0.005 | <0.005 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|-------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | LCS | Low | High |
| EA010P: Conductivity by PC Titrator (QCLot: 2158442) | | | | | | | | |
| EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | <1 | 1412 µS/cm | 99.3 | 85 | 119 |
| EA010P: Conductivity by PC Titrator (QCLot: 2158446) | | | | | | | | |
| EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | <1 | 1412 µS/cm | 101 | 85 | 119 |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 2158171) | | | | | | | | |
| EA015H: Total Dissolved Solids @180°C | ---- | 10 | mg/L | <10 | 2000 mg/L | 100 | 94 | 107 |
| | | | | <10 | 293 mg/L | 101 | 90 | 110 |
| EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 2158172) | | | | | | | | |
| EA015H: Total Dissolved Solids @180°C | ---- | 10 | mg/L | <10 | 2000 mg/L | 102 | 94 | 107 |
| | | | | <10 | 293 mg/L | 101 | 90 | 110 |
| ED037P: Alkalinity by PC Titrator (QCLot: 2158445) | | | | | | | | |
| ED037-P: Total Alkalinity as CaCO3 | ---- | ---- | mg/L | ---- | 200 mg/L | 95.3 | 88 | 112 |
| ED037P: Alkalinity by PC Titrator (QCLot: 2158448) | | | | | | | | |
| ED037-P: Total Alkalinity as CaCO3 | ---- | ---- | mg/L | ---- | 200 mg/L | 96.2 | 88 | 112 |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2155903) | | | | | | | | |
| ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | <1 | 25 mg/L | 99.7 | 86 | 115 |
| | | | | <1 | 100 mg/L | 100 | 86 | 115 |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2158229) | | | | | | | | |
| ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | <1 | 25 mg/L | 105 | 86 | 115 |
| | | | | <1 | 100 mg/L | 100 | 86 | 115 |
| ED045G: Chloride by Discrete Analyser (QCLot: 2155904) | | | | | | | | |
| ED045G: Chloride | 16887-00-6 | 1 | mg/L | <1 | 10 mg/L | 100 | 84 | 122 |
| | | | | <1 | 1000 mg/L | 105 | 84 | 122 |
| ED045G: Chloride by Discrete Analyser (QCLot: 2158230) | | | | | | | | |
| ED045G: Chloride | 16887-00-6 | 1 | mg/L | <1 | 10 mg/L | 94.5 | 84 | 122 |
| | | | | <1 | 1000 mg/L | 107 | 84 | 122 |
| ED093F: Dissolved Major Cations (QCLot: 2160601) | | | | | | | | |
| ED093F: Calcium | 7440-70-2 | 1 | mg/L | <1 | 5 mg/L | 96.0 | 92 | 113 |
| ED093F: Magnesium | 7439-95-4 | 1 | mg/L | <1 | 5 mg/L | 97.5 | 87 | 114 |
| ED093F: Sodium | 7440-23-5 | 1 | mg/L | <1 | 50 mg/L | 101 | 88 | 113 |
| ED093F: Potassium | 7440-09-7 | 1 | mg/L | <1 | 50 mg/L | 95.6 | 87 | 112 |
| ED093F: Dissolved Major Cations (QCLot: 2160602) | | | | | | | | |
| ED093F: Calcium | 7440-70-2 | 1 | mg/L | <1 | 5 mg/L | 97.1 | 92 | 113 |
| ED093F: Magnesium | 7439-95-4 | 1 | mg/L | <1 | 5 mg/L | 99.0 | 87 | 114 |

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| ED093F: Dissolved Major Cations (QCLot: 2160602) - continued | | | | | | | | |
| ED093F: Sodium | 7440-23-5 | 1 | mg/L | <1 | 50 mg/L | 98.2 | 88 | 113 |
| ED093F: Potassium | 7440-09-7 | 1 | mg/L | <1 | 50 mg/L | 93.4 | 87 | 112 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2160599) | | | | | | | | |
| EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 102 | 93 | 105 |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.4 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 96.7 | 84 | 104 |
| EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.6 | 83 | 103 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 91.8 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.5 | 83 | 105 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.3 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 93.5 | 82 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 95.3 | 85 | 109 |
| EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | <0.05 | 0.5 mg/L | 100 | 94 | 106 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2160603) | | | | | | | | |
| EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 100 | 93 | 105 |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.3 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 96.0 | 84 | 104 |
| EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 94.2 | 83 | 103 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 91.1 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.9 | 83 | 105 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 94.5 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 92.4 | 82 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 94.4 | 85 | 109 |
| EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | <0.05 | 0.5 mg/L | 103 | 94 | 106 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2160600) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 110 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2159543) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 103 | 92 | 111 |
| EK040P: Fluoride by PC Titrator (QCLot: 2158435) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 102 | 87 | 117 |
| EK040P: Fluoride by PC Titrator (QCLot: 2158447) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 108 | 87 | 117 |
| EK055G: Ammonia as N by Discrete Analyser (QCLot: 2161847) | | | | | | | | |
| EK055G: Ammonia as N | 7664-41-7 | 0.01 | mg/L | <0.01 | 1 mg/L | 99.7 | 87 | 117 |
| EK057G: Nitrite as N by Discrete Analyser (QCLot: 2155905) | | | | | | | | |
| EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 99.2 | 92 | 111 |
| EK057G: Nitrite as N by Discrete Analyser (QCLot: 2158232) | | | | | | | | |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|----------------------|------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EK057G: Nitrite as N by Discrete Analyser (QCLot: 2158232) - continued | | | | | | | | |
| EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 103 | 92 | 111 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2161846) | | | | | | | | |
| EK059G: Nitrite + Nitrate as N | ---- | 0.01 | mg/L | <0.01 | 0.5 mg/L | 112 | 93 | 120 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2155680) | | | | | | | | |
| EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | <0.1 | 5 mg/L | 98.5 | 70 | 117 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2155683) | | | | | | | | |
| EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | <0.1 | 5 mg/L | 93.3 | 70 | 117 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2159102) | | | | | | | | |
| EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | <0.1 | 5 mg/L | 93.7 | 70 | 117 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2155681) | | | | | | | | |
| EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | <0.01 | 2.21 mg/L | 100.0 | 72 | 114 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2155682) | | | | | | | | |
| EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | <0.01 | 2.21 mg/L | 97.2 | 72 | 114 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2159101) | | | | | | | | |
| EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | <0.01 | 2.21 mg/L | 87.6 | 72 | 114 |
| EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2155906) | | | | | | | | |
| EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 111 | 93 | 113 |
| EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2158231) | | | | | | | | |
| EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 105 | 93 | 113 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2158105) | | | | | | | | |
| EP074: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 95.8 | 76 | 119 |
| EP074: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 97.7 | 76 | 118 |
| EP074: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 96.3 | 76 | 118 |
| EP074: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | 40 µg/L | 95.2 | 75 | 118 |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 95.5 | 79 | 116 |
| EP074: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 98.2 | 79 | 118 |
| EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | 20 µg/L | 94.3 | 72 | 118 |
| EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | 20 µg/L | 88.6 | 66 | 116 |
| EP074: 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | 20 µg/L | 90.2 | 69 | 114 |
| EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | 20 µg/L | 87.6 | 67 | 115 |
| EP074: 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | 20 µg/L | 90.9 | 70 | 113 |
| EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | 20 µg/L | 89.7 | 70 | 115 |
| EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | 20 µg/L | 89.8 | 67 | 116 |
| EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | 20 µg/L | 87.7 | 60 | 116 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2164819) | | | | | | | | |
| EP074: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 92.8 | 76 | 119 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2164819) - continued | | | | | | | | |
| EP074: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 98.4 | 76 | 118 |
| EP074: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 95.6 | 76 | 118 |
| EP074: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | 40 µg/L | 95.0 | 75 | 118 |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 91.2 | 79 | 116 |
| EP074: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 96.6 | 79 | 118 |
| EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | 20 µg/L | 103 | 72 | 118 |
| EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | 20 µg/L | 92.0 | 66 | 116 |
| EP074: 1.3.5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | 20 µg/L | 93.2 | 69 | 114 |
| EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | 20 µg/L | 94.6 | 67 | 115 |
| EP074: 1.2.4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | 20 µg/L | 94.2 | 70 | 113 |
| EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | 20 µg/L | 94.0 | 70 | 115 |
| EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | 20 µg/L | 94.4 | 67 | 116 |
| EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | 20 µg/L | 92.2 | 60 | 116 |
| EP074B: Oxygenated Compounds (QCLot: 2158105) | | | | | | | | |
| EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | 200 µg/L | 93.9 | 68 | 123 |
| EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | 200 µg/L | 94.1 | 68 | 132 |
| EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | 200 µg/L | 96.5 | 75 | 130 |
| EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | 200 µg/L | 96.8 | 74 | 130 |
| EP074B: Oxygenated Compounds (QCLot: 2164819) | | | | | | | | |
| EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | 200 µg/L | 91.7 | 68 | 123 |
| EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | 200 µg/L | 100 | 68 | 132 |
| EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | 200 µg/L | 96.6 | 75 | 130 |
| EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | 200 µg/L | 102 | 74 | 130 |
| EP074C: Sulfonated Compounds (QCLot: 2158105) | | | | | | | | |
| EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | 20 µg/L | 80.5 | 55 | 125 |
| EP074C: Sulfonated Compounds (QCLot: 2164819) | | | | | | | | |
| EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | 20 µg/L | 86.2 | 55 | 125 |
| EP074D: Fumigants (QCLot: 2158105) | | | | | | | | |
| EP074: 2.2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | 20 µg/L | 87.8 | 65 | 120 |
| EP074: 1.2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | 20 µg/L | 94.4 | 78 | 116 |
| EP074: cis-1.3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | 20 µg/L | 90.8 | 76 | 112 |
| EP074: trans-1.3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | 20 µg/L | 89.8 | 76 | 112 |
| EP074: 1.2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | 20 µg/L | 97.2 | 79 | 117 |
| EP074D: Fumigants (QCLot: 2164819) | | | | | | | | |
| EP074: 2.2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | 20 µg/L | 92.4 | 65 | 120 |
| EP074: 1.2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | 20 µg/L | 93.5 | 78 | 116 |
| EP074: cis-1.3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | 20 µg/L | 89.1 | 76 | 112 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB) Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|--------|--------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP074D: Fumigants (QCLot: 2164819) - continued | | | | | | | | |
| EP074: trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | 20 µg/L | 89.6 | 76 | 112 |
| EP074: 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | 20 µg/L | 97.8 | 79 | 117 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2158105) | | | | | | | | |
| EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | 200 µg/L | 89.7 | 50 | 139 |
| EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | 200 µg/L | 92.8 | 59 | 135 |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 93.9 | 53 | 135 |
| EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | 200 µg/L | 84.9 | 52 | 125 |
| EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | 200 µg/L | 85.2 | 62 | 128 |
| EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | 200 µg/L | 92.0 | 62 | 125 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 90.2 | 63 | 124 |
| EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | 20 µg/L | 68.0 | 31 | 126 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 91.2 | 68 | 119 |
| EP074: 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | 20 µg/L | 94.3 | 74 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 96.2 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 89.8 | 68 | 119 |
| EP074: 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | 20 µg/L | 89.5 | 66 | 118 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 85.2 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 97.4 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 91.4 | 67 | 120 |
| EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | 20 µg/L | 95.9 | 80 | 116 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 100 | 84 | 117 |
| EP074: 1,3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | 20 µg/L | 101 | 82 | 118 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 94.0 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 92.2 | 76 | 112 |
| EP074: trans-1,4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | 20 µg/L | 88.6 | 71 | 121 |
| EP074: cis-1,4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | 20 µg/L | 79.9 | 68 | 116 |
| EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 100 | 81 | 124 |
| EP074: 1,2,3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | 20 µg/L | 102 | 80 | 123 |
| EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | 20 µg/L | 85.3 | 70 | 110 |
| EP074: 1,2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | 20 µg/L | 86.8 | 74 | 113 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2164819) | | | | | | | | |
| EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | 200 µg/L | 78.9 | 50 | 139 |
| EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | 200 µg/L | 87.2 | 59 | 135 |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 89.4 | 53 | 135 |
| EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | 200 µg/L | 78.4 | 52 | 125 |
| EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | 200 µg/L | 86.3 | 62 | 128 |
| EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | 200 µg/L | 95.1 | 62 | 125 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 91.2 | 63 | 124 |
| EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | 20 µg/L | 66.8 | 31 | 126 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2164819) - continued | | | | | | | | |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 91.7 | 68 | 119 |
| EP074: 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | 20 µg/L | 93.8 | 74 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 94.9 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 92.5 | 68 | 119 |
| EP074: 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | 20 µg/L | 91.7 | 66 | 118 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 89.8 | 62 | 117 |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 98.1 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 91.7 | 67 | 120 |
| EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | 20 µg/L | 95.3 | 80 | 116 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 101 | 84 | 117 |
| EP074: 1,3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | 20 µg/L | 102 | 82 | 118 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 97.8 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 93.3 | 76 | 112 |
| EP074: trans-1,4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | 20 µg/L | 91.2 | 71 | 121 |
| EP074: cis-1,4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | 20 µg/L | 84.5 | 68 | 116 |
| EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 102 | 81 | 124 |
| EP074: 1,2,3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | 20 µg/L | 104 | 80 | 123 |
| EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | 20 µg/L | 87.8 | 70 | 110 |
| EP074: 1,2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | 20 µg/L | 91.8 | 74 | 113 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2158105) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 97.2 | 81 | 116 |
| EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | 20 µg/L | 94.4 | 78 | 114 |
| EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | 20 µg/L | 90.1 | 72 | 115 |
| EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | 20 µg/L | 89.2 | 71 | 114 |
| EP074: 1,2,3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | 20 µg/L | 97.6 | 73 | 120 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2164819) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 95.8 | 81 | 116 |
| EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | 20 µg/L | 94.3 | 78 | 114 |
| EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | 20 µg/L | 92.5 | 72 | 115 |
| EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | 20 µg/L | 92.4 | 71 | 114 |
| EP074: 1,2,3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | 20 µg/L | 98.9 | 73 | 120 |
| EP074G: Trihalomethanes (QCLot: 2158105) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 96.2 | 79 | 117 |
| EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | 20 µg/L | 93.4 | 78 | 113 |
| EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | 20 µg/L | 91.2 | 76 | 112 |
| EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | 20 µg/L | 87.0 | 73 | 112 |
| EP074G: Trihalomethanes (QCLot: 2164819) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 96.7 | 79 | 117 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074G: Trihalomethanes (QCLot: 2164819) - continued | | | | | | | | |
| EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | 20 µg/L | 93.7 | 78 | 113 |
| EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | 20 µg/L | 95.3 | 76 | 112 |
| EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | 20 µg/L | 92.9 | 73 | 112 |
| EP075A: Phenolic Compounds (QCLot: 2155490) | | | | | | | | |
| EP075: Phenol | 108-95-2 | 2 | µg/L | <2 | 10 µg/L | 34.0 | 20 | 48 |
| EP075: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 72.9 | 49 | 100 |
| EP075: 2-Methylphenol | 95-48-7 | 2 | µg/L | <2 | 10 µg/L | 67.4 | 43 | 95 |
| EP075: 3- & 4-Methylphenol | 1319-77-3 | 2 | µg/L | <2 | 10 µg/L | 73.1 | 36 | 92 |
| EP075: 2-Nitrophenol | 88-75-5 | 2 | µg/L | <2 | 10 µg/L | 81.4 | 47 | 111 |
| EP075: 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | <2 | 10 µg/L | 76.7 | 49 | 110 |
| EP075: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 74.0 | 50 | 111 |
| EP075: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 79.8 | 53 | 108 |
| EP075: 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | <2 | 10 µg/L | 75.0 | 51 | 109 |
| EP075: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 75.2 | 48 | 114 |
| EP075: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 73.5 | 48 | 115 |
| EP075: Pentachlorophenol | 87-86-5 | 4 | µg/L | <4 | 10 µg/L | 39.6 | 14 | 124 |
| EP075A: Phenolic Compounds (QCLot: 2156163) | | | | | | | | |
| EP075: Phenol | 108-95-2 | 2 | µg/L | <2 | 10 µg/L | 42.3 | 20 | 48 |
| EP075: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 84.5 | 49 | 100 |
| EP075: 2-Methylphenol | 95-48-7 | 2 | µg/L | <2 | 10 µg/L | 76.5 | 43 | 95 |
| EP075: 3- & 4-Methylphenol | 1319-77-3 | 2 | µg/L | <2 | 10 µg/L | 47.0 | 36 | 92 |
| EP075: 2-Nitrophenol | 88-75-5 | 2 | µg/L | <2 | 10 µg/L | 96.9 | 47 | 111 |
| EP075: 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | <2 | 10 µg/L | 89.1 | 49 | 110 |
| EP075: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 87.3 | 50 | 111 |
| EP075: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 92.8 | 53 | 108 |
| EP075: 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | <2 | 10 µg/L | 92.6 | 51 | 109 |
| EP075: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 88.1 | 48 | 114 |
| EP075: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 83.4 | 48 | 115 |
| EP075: Pentachlorophenol | 87-86-5 | 4 | µg/L | <4 | 10 µg/L | 75.6 | 14 | 124 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2155490) | | | | | | | | |
| EP075: Naphthalene | 91-20-3 | 2 | µg/L | <2 | 10 µg/L | 82.2 | 55 | 108 |
| EP075: 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | <2 | 10 µg/L | 82.6 | 54 | 113 |
| EP075: 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | <2 | 10 µg/L | 82.6 | 54 | 112 |
| EP075: Acenaphthylene | 208-96-8 | 2 | µg/L | <2 | 10 µg/L | 82.0 | 55 | 113 |
| EP075: Acenaphthene | 83-32-9 | 2 | µg/L | <2 | 10 µg/L | 83.4 | 58 | 110 |
| EP075: Fluorene | 86-73-7 | 2 | µg/L | <2 | 10 µg/L | 85.2 | 59 | 113 |
| EP075: Phenanthrene | 85-01-8 | 2 | µg/L | <2 | 10 µg/L | 86.1 | 61 | 112 |
| EP075: Anthracene | 120-12-7 | 2 | µg/L | <2 | 10 µg/L | 85.7 | 61 | 112 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2155490) - continued | | | | | | | | |
| EP075: Fluoranthene | 206-44-0 | 2 | µg/L | <2 | 10 µg/L | 86.0 | 61 | 114 |
| EP075: Pyrene | 129-00-0 | 2 | µg/L | <2 | 10 µg/L | 86.6 | 60 | 114 |
| EP075: N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | <2 | 10 µg/L | 85.5 | 55 | 119 |
| EP075: Benz(a)anthracene | 56-55-3 | 2 | µg/L | <2 | 10 µg/L | 85.4 | 60 | 114 |
| EP075: Chrysene | 218-01-9 | 2 | µg/L | <2 | 10 µg/L | 90.4 | 60 | 116 |
| EP075: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 4 | µg/L | <4 | 20 µg/L | 87.5 | 60 | 114 |
| EP075: 7.12-Dimethylbenz(a)anthracene | 57-97-6 | 2 | µg/L | <2 | 10 µg/L | 88.3 | 55 | 140 |
| EP075: Benzo(a)pyrene | 50-32-8 | 2 | µg/L | <2 | 10 µg/L | 86.7 | 58 | 116 |
| EP075: 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | <2 | 10 µg/L | 84.1 | 48 | 119 |
| EP075: Indeno(1.2.3.cd)pyrene | 193-39-5 | 2 | µg/L | <2 | 10 µg/L | 81.9 | 58 | 114 |
| EP075: Dibenz(a.h)anthracene | 53-70-3 | 2 | µg/L | <2 | 10 µg/L | 84.1 | 57 | 115 |
| EP075: Benzo(g.h.i)perylene | 191-24-2 | 2 | µg/L | <2 | 10 µg/L | 79.2 | 57 | 117 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2156163) | | | | | | | | |
| EP075: Naphthalene | 91-20-3 | 2 | µg/L | <2 | 10 µg/L | 95.9 | 55 | 108 |
| EP075: 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | <2 | 10 µg/L | 96.8 | 54 | 113 |
| EP075: 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | <2 | 10 µg/L | 95.5 | 54 | 112 |
| EP075: Acenaphthylene | 208-96-8 | 2 | µg/L | <2 | 10 µg/L | 97.2 | 55 | 113 |
| EP075: Acenaphthene | 83-32-9 | 2 | µg/L | <2 | 10 µg/L | 99.9 | 58 | 110 |
| EP075: Fluorene | 86-73-7 | 2 | µg/L | <2 | 10 µg/L | 97.5 | 59 | 113 |
| EP075: Phenanthrene | 85-01-8 | 2 | µg/L | <2 | 10 µg/L | 99.2 | 61 | 112 |
| EP075: Anthracene | 120-12-7 | 2 | µg/L | <2 | 10 µg/L | 100 | 61 | 112 |
| EP075: Fluoranthene | 206-44-0 | 2 | µg/L | <2 | 10 µg/L | 99.8 | 61 | 114 |
| EP075: Pyrene | 129-00-0 | 2 | µg/L | <2 | 10 µg/L | 100 | 60 | 114 |
| EP075: N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | <2 | 10 µg/L | 88.1 | 55 | 119 |
| EP075: Benz(a)anthracene | 56-55-3 | 2 | µg/L | <2 | 10 µg/L | 97.8 | 60 | 114 |
| EP075: Chrysene | 218-01-9 | 2 | µg/L | <2 | 10 µg/L | 99.0 | 60 | 116 |
| EP075: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 4 | µg/L | <4 | 20 µg/L | 102 | 60 | 114 |
| EP075: 7.12-Dimethylbenz(a)anthracene | 57-97-6 | 2 | µg/L | <2 | 10 µg/L | 102 | 55 | 140 |
| EP075: Benzo(a)pyrene | 50-32-8 | 2 | µg/L | <2 | 10 µg/L | 99.7 | 58 | 116 |
| EP075: 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | <2 | 10 µg/L | 91.3 | 48 | 119 |
| EP075: Indeno(1.2.3.cd)pyrene | 193-39-5 | 2 | µg/L | <2 | 10 µg/L | 92.9 | 58 | 114 |
| EP075: Dibenz(a.h)anthracene | 53-70-3 | 2 | µg/L | <2 | 10 µg/L | 93.6 | 57 | 115 |
| EP075: Benzo(g.h.i)perylene | 191-24-2 | 2 | µg/L | <2 | 10 µg/L | 85.6 | 57 | 117 |
| EP075C: Phthalate Esters (QCLot: 2155490) | | | | | | | | |
| EP075: Dimethyl phthalate | 131-11-3 | 2 | µg/L | <2 | 10 µg/L | 84.4 | 56 | 117 |
| EP075: Diethyl phthalate | 84-66-2 | 2 | µg/L | <2 | 10 µg/L | 87.6 | 61 | 115 |
| EP075: Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | <2 | 10 µg/L | 87.4 | 66 | 117 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|--------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | Low | High |
| CAS Number | LOR | Unit | Result | | | LCS | | |
| EP075C: Phthalate Esters (QCLot: 2155490) - continued | | | | | | | | |
| EP075: Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | <2 | 10 µg/L | 86.0 | 61 | 116 |
| EP075: bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | <10 | 10 µg/L | 77.7 | 56 | 118 |
| EP075: Di-n-octylphthalate | 117-84-0 | 2 | µg/L | <2 | 10 µg/L | 85.9 | 62 | 115 |
| EP075C: Phthalate Esters (QCLot: 2156163) | | | | | | | | |
| EP075: Dimethyl phthalate | 131-11-3 | 2 | µg/L | <2 | 10 µg/L | 95.2 | 56 | 117 |
| EP075: Diethyl phthalate | 84-66-2 | 2 | µg/L | <2 | 10 µg/L | 100 | 61 | 115 |
| EP075: Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | <2 | 10 µg/L | 103 | 66 | 117 |
| EP075: Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | <2 | 10 µg/L | 98.1 | 61 | 116 |
| EP075: bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | <10 | 10 µg/L | 93.9 | 56 | 118 |
| EP075: Di-n-octylphthalate | 117-84-0 | 2 | µg/L | <2 | 10 µg/L | 101 | 62 | 115 |
| EP075D: Nitrosamines (QCLot: 2155490) | | | | | | | | |
| EP075: N-Nitrosomethylethylamine | 10595-95-6 | 2 | µg/L | <2 | 10 µg/L | 61.7 | 28 | 94 |
| EP075: N-Nitrosodiethylamine | 55-18-5 | 2 | µg/L | <2 | 10 µg/L | 76.3 | 45 | 110 |
| EP075: N-Nitrosopyrrolidine | 930-55-2 | 4 | µg/L | <4 | 10 µg/L | 57.9 | 37 | 84 |
| EP075: N-Nitrosomorpholine | 59-89-2 | 2 | µg/L | <2 | 10 µg/L | 57.1 | 33 | 81 |
| EP075: N-Nitrosodi-n-propylamine | 621-64-7 | 2 | µg/L | <2 | 10 µg/L | 83.0 | 52 | 115 |
| EP075: N-Nitrosopiperidine | 100-75-4 | 2 | µg/L | <2 | 10 µg/L | 79.6 | 48 | 112 |
| EP075: N-Nitrosodibutylamine | 924-16-3 | 2 | µg/L | <2 | 10 µg/L | 85.1 | 53 | 118 |
| EP075: N-Nitrosodiphenyl & Diphenylamine | 86-30-6 | 4 | µg/L | <4 | 10 µg/L | 85.1 | 59 | 114 |
| | 122-39-4 | | | | | | | |
| EP075: Methapyrilene | 91-80-5 | 2 | µg/L | <2 | 10 µg/L | 39.6 | 10 | 147 |
| EP075D: Nitrosamines (QCLot: 2156163) | | | | | | | | |
| EP075: N-Nitrosomethylethylamine | 10595-95-6 | 2 | µg/L | <2 | 10 µg/L | 69.5 | 28 | 94 |
| EP075: N-Nitrosodiethylamine | 55-18-5 | 2 | µg/L | <2 | 10 µg/L | 84.2 | 45 | 110 |
| EP075: N-Nitrosopyrrolidine | 930-55-2 | 4 | µg/L | <4 | 10 µg/L | 64.0 | 37 | 84 |
| EP075: N-Nitrosomorpholine | 59-89-2 | 2 | µg/L | <2 | 10 µg/L | 62.9 | 33 | 81 |
| EP075: N-Nitrosodi-n-propylamine | 621-64-7 | 2 | µg/L | <2 | 10 µg/L | 94.6 | 52 | 115 |
| EP075: N-Nitrosopiperidine | 100-75-4 | 2 | µg/L | <2 | 10 µg/L | 89.3 | 48 | 112 |
| EP075: N-Nitrosodibutylamine | 924-16-3 | 2 | µg/L | <2 | 10 µg/L | 96.9 | 53 | 118 |
| EP075: N-Nitrosodiphenyl & Diphenylamine | 86-30-6 | 4 | µg/L | <4 | 10 µg/L | 97.1 | 59 | 114 |
| | 122-39-4 | | | | | | | |
| EP075: Methapyrilene | 91-80-5 | 2 | µg/L | <2 | 10 µg/L | 136 | 10 | 147 |
| EP075E: Nitroaromatics and Ketones (QCLot: 2155490) | | | | | | | | |
| EP075: 2-Picoline | 109-06-8 | 2 | µg/L | <2 | 10 µg/L | 64.4 | 20 | 105 |
| EP075: Acetophenone | 98-86-2 | 2 | µg/L | <2 | 10 µg/L | 84.6 | 55 | 110 |
| EP075: Nitrobenzene | 98-95-3 | 2 | µg/L | <2 | 10 µg/L | 80.0 | 51 | 111 |
| EP075: Isophorone | 78-59-1 | 2 | µg/L | <2 | 10 µg/L | 82.8 | 54 | 113 |
| EP075: 2,6-Dinitrotoluene | 606-20-2 | 4 | µg/L | <4 | 10 µg/L | 80.8 | 55 | 116 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|--------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP075E: Nitroaromatics and Ketones (QCLot: 2155490) - continued | | | | | | | | |
| EP075: 2,4-Dinitrotoluene | 121-14-2 | 4 | µg/L | <4 | 10 µg/L | 84.0 | 57 | 111 |
| EP075: 1-Naphthylamine | 134-32-7 | 2 | µg/L | <2 | 10 µg/L | 48.8 | 11 | 119 |
| EP075: 4-Nitroquinoline-N-oxide | 56-57-5 | 2 | µg/L | <2 | 10 µg/L | 91.4 | 42 | 148 |
| EP075: 5-Nitro-o-toluidine | 99-55-8 | 2 | µg/L | <2 | 10 µg/L | 87.4 | 51 | 121 |
| EP075: Azobenzene | 103-33-3 | 2 | µg/L | <2 | 10 µg/L | 83.2 | 58 | 114 |
| EP075: 1,3,5-Trinitrobenzene | 99-35-4 | 2 | µg/L | <2 | 10 µg/L | 78.4 | 37 | 123 |
| EP075: Phenacetin | 62-44-2 | 2 | µg/L | <2 | 10 µg/L | 71.1 | 47 | 102 |
| EP075: 4-Aminobiphenyl | 92-67-1 | 2 | µg/L | <2 | 10 µg/L | 68.9 | 24 | 149 |
| EP075: Pentachloronitrobenzene | 82-68-8 | 2 | µg/L | <2 | 10 µg/L | 84.6 | 57 | 114 |
| EP075: Pronamide | 23950-58-5 | 2 | µg/L | <2 | 10 µg/L | 86.0 | 62 | 113 |
| EP075: Dimethylaminoazobenzene | 60-11-7 | 2 | µg/L | <2 | 10 µg/L | 84.7 | 40 | 122 |
| EP075: Chlorobenzilate | 510-15-6 | 2 | µg/L | <2 | 10 µg/L | 84.9 | 58 | 116 |
| EP075E: Nitroaromatics and Ketones (QCLot: 2156163) | | | | | | | | |
| EP075: 2-Picoline | 109-06-8 | 2 | µg/L | <2 | 10 µg/L | 74.9 | 20 | 105 |
| EP075: Acetophenone | 98-86-2 | 2 | µg/L | <2 | 10 µg/L | 96.9 | 55 | 110 |
| EP075: Nitrobenzene | 98-95-3 | 2 | µg/L | <2 | 10 µg/L | 94.9 | 51 | 111 |
| EP075: Isophorone | 78-59-1 | 2 | µg/L | <2 | 10 µg/L | 96.4 | 54 | 113 |
| EP075: 2,6-Dinitrotoluene | 606-20-2 | 4 | µg/L | <4 | 10 µg/L | 96.5 | 55 | 116 |
| EP075: 2,4-Dinitrotoluene | 121-14-2 | 4 | µg/L | <4 | 10 µg/L | 98.2 | 57 | 111 |
| EP075: 1-Naphthylamine | 134-32-7 | 2 | µg/L | <2 | 10 µg/L | # 125 | 11 | 119 |
| EP075: 4-Nitroquinoline-N-oxide | 56-57-5 | 2 | µg/L | <2 | 10 µg/L | 110 | 42 | 148 |
| EP075: 5-Nitro-o-toluidine | 99-55-8 | 2 | µg/L | <2 | 10 µg/L | 93.0 | 51 | 121 |
| EP075: Azobenzene | 103-33-3 | 2 | µg/L | <2 | 10 µg/L | 97.2 | 58 | 114 |
| EP075: 1,3,5-Trinitrobenzene | 99-35-4 | 2 | µg/L | <2 | 10 µg/L | 63.8 | 37 | 123 |
| EP075: Phenacetin | 62-44-2 | 2 | µg/L | <2 | 10 µg/L | 75.3 | 47 | 102 |
| EP075: 4-Aminobiphenyl | 92-67-1 | 2 | µg/L | <2 | 10 µg/L | 116 | 24 | 149 |
| EP075: Pentachloronitrobenzene | 82-68-8 | 2 | µg/L | <2 | 10 µg/L | 97.7 | 57 | 114 |
| EP075: Pronamide | 23950-58-5 | 2 | µg/L | <2 | 10 µg/L | 100.0 | 62 | 113 |
| EP075: Dimethylaminoazobenzene | 60-11-7 | 2 | µg/L | <2 | 10 µg/L | 98.2 | 40 | 122 |
| EP075: Chlorobenzilate | 510-15-6 | 2 | µg/L | <2 | 10 µg/L | 100 | 58 | 116 |
| EP075F: Haloethers (QCLot: 2155490) | | | | | | | | |
| EP075: Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | <2 | 10 µg/L | 77.8 | 51 | 108 |
| EP075: Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | <2 | 10 µg/L | 83.3 | 53 | 114 |
| EP075: 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | <2 | 10 µg/L | 85.4 | 58 | 113 |
| EP075: 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | <2 | 10 µg/L | 84.1 | 56 | 115 |
| EP075F: Haloethers (QCLot: 2156163) | | | | | | | | |
| EP075: Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | <2 | 10 µg/L | 89.7 | 51 | 108 |
| EP075: Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | <2 | 10 µg/L | 96.6 | 53 | 114 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|--|-----------|------|------|---------------------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| | | | | | | | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP075F: Haloethers (QCLot: 2156163) - continued | | | | | | | | |
| EP075: 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | <2 | 10 µg/L | 95.9 | 58 | 113 |
| EP075: 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | <2 | 10 µg/L | 96.1 | 56 | 115 |
| EP075G: Chlorinated Hydrocarbons (QCLot: 2155490) | | | | | | | | |
| EP075: 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | <2 | 10 µg/L | 77.1 | 52 | 103 |
| EP075: 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | <2 | 10 µg/L | 77.4 | 52 | 104 |
| EP075: 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | <2 | 10 µg/L | 78.1 | 51 | 106 |
| EP075: Hexachloroethane | 67-72-1 | 2 | µg/L | <2 | 10 µg/L | 78.8 | 49 | 106 |
| EP075: 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | <2 | 10 µg/L | 81.1 | 50 | 111 |
| EP075: Hexachloropropylene | 1888-71-7 | 2 | µg/L | <2 | 10 µg/L | 80.9 | 47 | 110 |
| EP075: Hexachlorobutadiene | 87-68-3 | 2 | µg/L | <2 | 10 µg/L | 80.7 | 51 | 110 |
| EP075: Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | <10 | 10 µg/L | 69.4 | 13 | 129 |
| EP075: Pentachlorobenzene | 608-93-5 | 2 | µg/L | <2 | 10 µg/L | 81.4 | 55 | 112 |
| EP075: Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | <4 | 20 µg/L | 85.9 | 57 | 115 |
| EP075G: Chlorinated Hydrocarbons (QCLot: 2156163) | | | | | | | | |
| EP075: 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | <2 | 10 µg/L | 93.0 | 52 | 103 |
| EP075: 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | <2 | 10 µg/L | 92.1 | 52 | 104 |
| EP075: 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | <2 | 10 µg/L | 91.5 | 51 | 106 |
| EP075: Hexachloroethane | 67-72-1 | 2 | µg/L | <2 | 10 µg/L | 94.3 | 49 | 106 |
| EP075: 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | <2 | 10 µg/L | 95.4 | 50 | 111 |
| EP075: Hexachloropropylene | 1888-71-7 | 2 | µg/L | <2 | 10 µg/L | 99.0 | 47 | 110 |
| EP075: Hexachlorobutadiene | 87-68-3 | 2 | µg/L | <2 | 10 µg/L | 94.6 | 51 | 110 |
| EP075: Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | <10 | 10 µg/L | 106 | 13 | 129 |
| EP075: Pentachlorobenzene | 608-93-5 | 2 | µg/L | <2 | 10 µg/L | 100 | 55 | 112 |
| EP075: Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | <4 | 20 µg/L | 99.2 | 57 | 115 |
| EP075H: Anilines and Benzidines (QCLot: 2155490) | | | | | | | | |
| EP075: Aniline | 62-53-3 | 2 | µg/L | <2 | 10 µg/L | 72.4 | 14 | 110 |
| EP075: 4-Chloroaniline | 106-47-8 | 2 | µg/L | <2 | 10 µg/L | 85.2 | 15 | 126 |
| EP075: 2-Nitroaniline | 88-74-4 | 4 | µg/L | <4 | 10 µg/L | 77.8 | 53 | 112 |
| EP075: 3-Nitroaniline | 99-09-2 | 4 | µg/L | <4 | 10 µg/L | 83.1 | 40 | 116 |
| EP075: Dibenzofuran | 132-64-9 | 2 | µg/L | <2 | 10 µg/L | 84.2 | 58 | 112 |
| EP075: 4-Nitroaniline | 100-01-8 | 2 | µg/L | <2 | 10 µg/L | 82.2 | 44 | 114 |
| EP075: Carbazole | 86-74-8 | 2 | µg/L | <2 | 10 µg/L | 87.3 | 61 | 116 |
| EP075: 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | <2 | 10 µg/L | 92.6 | 42 | 135 |
| EP075H: Anilines and Benzidines (QCLot: 2156163) | | | | | | | | |
| EP075: Aniline | 62-53-3 | 2 | µg/L | <2 | 10 µg/L | 104 | 14 | 110 |
| EP075: 4-Chloroaniline | 106-47-8 | 2 | µg/L | <2 | 10 µg/L | 126 | 15 | 126 |
| EP075: 2-Nitroaniline | 88-74-4 | 4 | µg/L | <4 | 10 µg/L | 88.9 | 53 | 112 |
| EP075: 3-Nitroaniline | 99-09-2 | 4 | µg/L | <4 | 10 µg/L | 111 | 40 | 116 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075H: Anilines and Benzidines (QCLot: 2156163) - continued | | | | | | | | |
| EP075: Dibenzofuran | 132-64-9 | 2 | µg/L | <2 | 10 µg/L | 97.0 | 58 | 112 |
| EP075: 4-Nitroaniline | 100-01-8 | 2 | µg/L | <2 | 10 µg/L | 70.0 | 44 | 114 |
| EP075: Carbazole | 86-74-8 | 2 | µg/L | <2 | 10 µg/L | 98.9 | 61 | 116 |
| EP075: 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | <2 | 10 µg/L | 116 | 42 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2155490) | | | | | | | | |
| EP075: alpha-BHC | 319-84-6 | 2 | µg/L | <2 | 10 µg/L | 86.1 | 56 | 116 |
| EP075: beta-BHC | 319-85-7 | 2 | µg/L | <2 | 10 µg/L | 79.7 | 58 | 115 |
| EP075: gamma-BHC | 58-89-9 | 2 | µg/L | <2 | 10 µg/L | 84.0 | 59 | 115 |
| EP075: delta-BHC | 319-86-8 | 2 | µg/L | <2 | 10 µg/L | 86.7 | 60 | 114 |
| EP075: Heptachlor | 76-44-8 | 2 | µg/L | <2 | 10 µg/L | 85.3 | 56 | 114 |
| EP075: Aldrin | 309-00-2 | 2 | µg/L | <2 | 10 µg/L | 84.3 | 59 | 114 |
| EP075: Heptachlor epoxide | 1024-57-3 | 2 | µg/L | <2 | 10 µg/L | 88.2 | 58 | 116 |
| EP075: alpha-Endosulfan | 959-98-8 | 2 | µg/L | <2 | 10 µg/L | 87.9 | 59 | 116 |
| EP075: 4,4'-DDE | 72-55-9 | 2 | µg/L | <2 | 10 µg/L | 90.5 | 61 | 117 |
| EP075: Dieldrin | 60-57-1 | 2 | µg/L | <2 | 10 µg/L | 86.1 | 59 | 116 |
| EP075: Endrin | 72-20-8 | 2 | µg/L | <2 | 10 µg/L | 86.5 | 56 | 117 |
| EP075: beta-Endosulfan | 33213-65-9 | 2 | µg/L | <2 | 10 µg/L | 90.6 | 59 | 115 |
| EP075: 4,4'-DDD | 72-54-8 | 2 | µg/L | <2 | 10 µg/L | 85.6 | 61 | 117 |
| EP075: Endosulfan sulfate | 1031-07-8 | 2 | µg/L | <2 | 10 µg/L | 89.4 | 55 | 120 |
| EP075: 4,4'-DDT | 50-29-3 | 4 | µg/L | <4 | 10 µg/L | 87.0 | 46 | 123 |
| EP075I: Organochlorine Pesticides (QCLot: 2156163) | | | | | | | | |
| EP075: alpha-BHC | 319-84-6 | 2 | µg/L | <2 | 10 µg/L | 98.1 | 56 | 116 |
| EP075: beta-BHC | 319-85-7 | 2 | µg/L | <2 | 10 µg/L | 95.1 | 58 | 115 |
| EP075: gamma-BHC | 58-89-9 | 2 | µg/L | <2 | 10 µg/L | 97.6 | 59 | 115 |
| EP075: delta-BHC | 319-86-8 | 2 | µg/L | <2 | 10 µg/L | 100 | 60 | 114 |
| EP075: Heptachlor | 76-44-8 | 2 | µg/L | <2 | 10 µg/L | 102 | 56 | 114 |
| EP075: Aldrin | 309-00-2 | 2 | µg/L | <2 | 10 µg/L | 99.9 | 59 | 114 |
| EP075: Heptachlor epoxide | 1024-57-3 | 2 | µg/L | <2 | 10 µg/L | 99.5 | 58 | 116 |
| EP075: alpha-Endosulfan | 959-98-8 | 2 | µg/L | <2 | 10 µg/L | 99.2 | 59 | 116 |
| EP075: 4,4'-DDE | 72-55-9 | 2 | µg/L | <2 | 10 µg/L | 106 | 61 | 117 |
| EP075: Dieldrin | 60-57-1 | 2 | µg/L | <2 | 10 µg/L | 102 | 59 | 116 |
| EP075: Endrin | 72-20-8 | 2 | µg/L | <2 | 10 µg/L | 98.3 | 56 | 117 |
| EP075: beta-Endosulfan | 33213-65-9 | 2 | µg/L | <2 | 10 µg/L | 99.1 | 59 | 115 |
| EP075: 4,4'-DDD | 72-54-8 | 2 | µg/L | <2 | 10 µg/L | 98.7 | 61 | 117 |
| EP075: Endosulfan sulfate | 1031-07-8 | 2 | µg/L | <2 | 10 µg/L | 101 | 55 | 120 |
| EP075: 4,4'-DDT | 50-29-3 | 4 | µg/L | <4 | 10 µg/L | 105 | 46 | 123 |
| EP075J: Organophosphorus Pesticides (QCLot: 2155490) | | | | | | | | |
| EP075: Dichlorvos | 62-73-7 | 2 | µg/L | <2 | 10 µg/L | 82.4 | 56 | 111 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075J: Organophosphorus Pesticides (QCLot: 2155490) - continued | | | | | | | | |
| EP075: Dimethoate | 60-51-5 | 2 | µg/L | <2 | 10 µg/L | 71.8 | 44 | 105 |
| EP075: Diazinon | 333-41-5 | 2 | µg/L | <2 | 10 µg/L | 86.7 | 62 | 114 |
| EP075: Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | <2 | 10 µg/L | 85.0 | 58 | 115 |
| EP075: Malathion | 121-75-5 | 2 | µg/L | <2 | 10 µg/L | 88.3 | 59 | 120 |
| EP075: Fenthion | 55-38-9 | 2 | µg/L | <2 | 10 µg/L | 87.0 | 60 | 116 |
| EP075: Chlorpyrifos | 2921-88-2 | 2 | µg/L | <2 | 10 µg/L | 86.5 | 61 | 115 |
| EP075: Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | <2 | 10 µg/L | 87.9 | 61 | 116 |
| EP075: Chlorfenvinphos | 470-90-6 | 2 | µg/L | <2 | 10 µg/L | 84.4 | 54 | 119 |
| EP075: Prothiofos | 34643-46-4 | 2 | µg/L | <2 | 10 µg/L | 85.5 | 60 | 116 |
| EP075: Ethion | 563-12-2 | 2 | µg/L | <2 | 10 µg/L | 87.2 | 59 | 118 |
| EP075J: Organophosphorus Pesticides (QCLot: 2156163) | | | | | | | | |
| EP075: Dichlorvos | 62-73-7 | 2 | µg/L | <2 | 10 µg/L | 92.7 | 56 | 111 |
| EP075: Dimethoate | 60-51-5 | 2 | µg/L | <2 | 10 µg/L | 74.8 | 44 | 105 |
| EP075: Diazinon | 333-41-5 | 2 | µg/L | <2 | 10 µg/L | 98.8 | 62 | 114 |
| EP075: Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | <2 | 10 µg/L | 98.0 | 58 | 115 |
| EP075: Malathion | 121-75-5 | 2 | µg/L | <2 | 10 µg/L | 103 | 59 | 120 |
| EP075: Fenthion | 55-38-9 | 2 | µg/L | <2 | 10 µg/L | 97.8 | 60 | 116 |
| EP075: Chlorpyrifos | 2921-88-2 | 2 | µg/L | <2 | 10 µg/L | 99.5 | 61 | 115 |
| EP075: Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | <2 | 10 µg/L | 99.9 | 61 | 116 |
| EP075: Chlorfenvinphos | 470-90-6 | 2 | µg/L | <2 | 10 µg/L | 95.4 | 54 | 119 |
| EP075: Prothiofos | 34643-46-4 | 2 | µg/L | <2 | 10 µg/L | 100.0 | 60 | 116 |
| EP075: Ethion | 563-12-2 | 2 | µg/L | <2 | 10 µg/L | 99.0 | 59 | 118 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2155489) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 88.4 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 90.7 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 90.0 | 55 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2158106) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 93.6 | 65 | 126 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2155489) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 93.0 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 90.4 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 96.6 | 53 | 136 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2158106) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 91.4 | 64 | 124 |
| EP080: BTEXN (QCLot: 2158106) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 93.1 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 98.8 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 95.4 | 71 | 125 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|----------------------|-------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP080: BTEXN (QCLot: 2158106) - continued | | | | | | | | |
| EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | 40 µg/L | 98.9 | 72 | 129 |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 102 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 123 | 70 | 125 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2158354) | | | | | | | | |
| EP231X-LL: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 102 | 50 | 130 |
| EP231X-LL: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 112 | 50 | 130 |
| EP231X-LL: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 105 | 50 | 130 |
| EP231X-LL: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 107 | 50 | 130 |
| EP231X-LL: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 96.6 | 50 | 130 |
| EP231X-LL: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 53.6 | 40 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2158354) | | | | | | | | |
| EP231X-LL: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.01 | µg/L | <0.01 | 0.25 µg/L | 105 | 50 | 130 |
| EP231X-LL: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 112 | 50 | 130 |
| EP231X-LL: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 114 | 50 | 130 |
| EP231X-LL: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 119 | 50 | 130 |
| EP231X-LL: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 115 | 50 | 130 |
| EP231X-LL: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 103 | 50 | 130 |
| EP231X-LL: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 78.4 | 50 | 130 |
| EP231X-LL: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 61.6 | 40 | 130 |
| EP231X-LL: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 51.8 | 40 | 130 |
| EP231X-LL: Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 89.8 | 40 | 130 |
| EP231X-LL: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 112 | 40 | 130 |
| EP231X-LL: Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 126 | 50 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2158354) | | | | | | | | |
| EP231X-LL: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 75.6 | 40 | 130 |
| EP231X-LL: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 53.3 | 40 | 130 |
| EP231X-LL: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 52.7 | 40 | 130 |
| EP231X-LL: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 63.7 | 50 | 130 |
| EP231X-LL: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.005 | µg/L | <0.005 | 0.125 µg/L | 65.6 | 40 | 130 |
| EP231X-LL: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 52.2 | 50 | 130 |
| EP231X-LL: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.002 | µg/L | <0.002 | 0.05 µg/L | 65.4 | 40 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2158354) | | | | | | | | |
| EP231X-LL: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 116 | 50 | 130 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-------------|-------|------|-----------------------------|---------------------------------------|---------------------------|--------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
LowHigh | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2158354) - continued | | | | | | | | |
| EP231X-LL: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 123 | 50 | 130 |
| EP231X-LL: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 102 | 50 | 130 |
| EP231X-LL: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.005 | µg/L | <0.005 | 0.05 µg/L | 58.6 | 50 | 130 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2155903) | | | | | | | |
| EM1900955-004 | Anonymous | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 10 mg/L | # Not Determined | 70 | 130 |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2158229) | | | | | | | |
| EM1900947-002 | Anonymous | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 10 mg/L | # Not Determined | 70 | 130 |
| ED045G: Chloride by Discrete Analyser (QCLot: 2155904) | | | | | | | |
| EM1900955-004 | Anonymous | ED045G: Chloride | 16887-00-6 | 400 mg/L | # Not Determined | 70 | 130 |
| ED045G: Chloride by Discrete Analyser (QCLot: 2158230) | | | | | | | |
| EM1900955-002 | Anonymous | ED045G: Chloride | 16887-00-6 | 400 mg/L | # Not Determined | 70 | 130 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2160599) | | | | | | | |
| EM1900966-001 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 2 mg/L | 89.8 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.5 mg/L | 92.0 | 81 | 133 |
| | | EG020A-F: Chromium | 7440-47-3 | 2 mg/L | 91.6 | 71 | 135 |
| | | EG020A-F: Copper | 7440-50-8 | 2 mg/L | 88.3 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 2 mg/L | 85.0 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 2 mg/L | 92.4 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 2 mg/L | 92.4 | 75 | 131 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2160603) | | | | | | | |
| EM1900976-016 | MW14_24/1/19 | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 96.4 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 93.0 | 81 | 133 |
| | | EG020A-F: Chromium | 7440-47-3 | 0.2 mg/L | 94.7 | 71 | 135 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 88.4 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 88.0 | 75 | 133 |

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2160603) - continued | | | | | | | |
| EM1900976-016 | MW14_24/1/19 | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 92.3 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 91.7 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2160600) | | | | | | | |
| EM1900966-002 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.1 mg/L | 112 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2159543) | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 103 | 59 | 127 |
| EK040P: Fluoride by PC Titrator (QCLot: 2158435) | | | | | | | |
| EM1900918-002 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | # 6.62 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2158447) | | | | | | | |
| EM1900976-010 | QC302_23/1/19 | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 106 | 70 | 130 |
| EK055G: Ammonia as N by Discrete Analyser (QCLot: 2161847) | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EK055G: Ammonia as N | 7664-41-7 | 1 mg/L | 106 | 70 | 130 |
| EK057G: Nitrite as N by Discrete Analyser (QCLot: 2155905) | | | | | | | |
| EM1900955-004 | Anonymous | EK057G: Nitrite as N | 14797-65-0 | 0.5 mg/L | 94.5 | 80 | 114 |
| EK057G: Nitrite as N by Discrete Analyser (QCLot: 2158232) | | | | | | | |
| EM1900986-032 | Anonymous | EK057G: Nitrite as N | 14797-65-0 | 0.5 mg/L | 97.2 | 80 | 114 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2161846) | | | | | | | |
| EM1900955-004 | Anonymous | EK059G: Nitrite + Nitrate as N | ---- | 0.5 mg/L | 105 | 70 | 130 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2155680) | | | | | | | |
| EM1900966-001 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 5 mg/L | 81.9 | 70 | 130 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2155683) | | | | | | | |
| EM1900976-004 | QC101_23/1/19 | EK061G: Total Kjeldahl Nitrogen as N | ---- | 5 mg/L | 82.5 | 70 | 130 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2159102) | | | | | | | |
| EM1900986-001 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 5 mg/L | 84.4 | 70 | 130 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2155681) | | | | | | | |
| EM1900966-001 | Anonymous | EK067G: Total Phosphorus as P | ---- | 1 mg/L | 82.5 | 70 | 130 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2155682) | | | | | | | |
| EM1900976-004 | QC101_23/1/19 | EK067G: Total Phosphorus as P | ---- | 1 mg/L | 83.5 | 70 | 130 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2159101) | | | | | | | |
| EM1900986-001 | Anonymous | EK067G: Total Phosphorus as P | ---- | 1 mg/L | 90.5 | 70 | 130 |
| EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2155906) | | | | | | | |
| EM1900976-001 | MW03_23/1/19 | EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.5 mg/L | 101 | 79 | 123 |
| EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2158231) | | | | | | | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2158231) - continued | | | | | | | |
| EM1901058-001 | Anonymous | EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.5 mg/L | 98.6 | 79 | 123 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2158105) | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP074: Benzene | 71-43-2 | 20 µg/L | 97.5 | 60 | 128 |
| | | EP074: Toluene | 108-88-3 | 20 µg/L | 99.1 | 64 | 132 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2164819) | | | | | | | |
| EM1901196-001 | Anonymous | EP074: Benzene | 71-43-2 | 20 µg/L | 83.8 | 60 | 128 |
| | | EP074: Toluene | 108-88-3 | 20 µg/L | 86.1 | 64 | 132 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2158105) | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 102 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 86.5 | 54 | 126 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2164819) | | | | | | | |
| EM1901196-001 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 81.2 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 70.4 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2158105) | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 99.0 | 68 | 132 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2164819) | | | | | | | |
| EM1901196-001 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 85.5 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2158106) | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 83.2 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2158106) | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 80.4 | 44 | 122 |
| EP080: BTEXN (QCLot: 2158106) | | | | | | | |
| EM1900976-002 | MW02_23/1/19 | EP080: Benzene | 71-43-2 | 20 µg/L | 98.0 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 102 | 72 | 132 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2158354) | | | | | | | |
| EM1900940-002 | Anonymous | EP231X-LL: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.05 µg/L | 89.8 | 50 | 130 |
| | | EP231X-LL: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.05 µg/L | 100 | 50 | 130 |
| | | EP231X-LL: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.05 µg/L | 75.2 | 50 | 130 |
| | | EP231X-LL: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.05 µg/L | 88.8 | 50 | 130 |
| | | EP231X-LL: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.05 µg/L | 80.0 | 50 | 130 |
| | | EP231X-LL: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.05 µg/L | 51.8 | 30 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2158354) | | | | | | | |
| EM1900940-002 | Anonymous | EP231X-LL: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.25 µg/L | 69.3 | 30 | 130 |
| | | EP231X-LL: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.05 µg/L | 96.6 | 50 | 130 |
| | | EP231X-LL: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.05 µg/L | 110 | 50 | 130 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--|-------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2158354) - continued | | | | | | | |
| EM1900940-002 | Anonymous | EP231X-LL: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.05 µg/L | 103 | 50 | 130 |
| | | EP231X-LL: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.05 µg/L | 107 | 50 | 130 |
| | | EP231X-LL: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.05 µg/L | 102 | 50 | 130 |
| | | EP231X-LL: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.05 µg/L | 83.6 | 50 | 130 |
| | | EP231X-LL: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.05 µg/L | 62.2 | 30 | 130 |
| | | EP231X-LL: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.05 µg/L | 57.2 | 30 | 130 |
| | | EP231X-LL: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.05 µg/L | 50.4 | 30 | 130 |
| | | EP231X-LL: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.125 µg/L | 63.1 | 30 | 130 |
| | | EP231X-LL: Perfluorohexadecanoic acid (PFHxDA) | 67905-19-5 | 0.05 µg/L | 91.2 | 30 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2158354) | | | | | | | |
| EM1900940-002 | Anonymous | EP231X-LL: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.05 µg/L | 70.8 | 30 | 130 |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.125 µg/L | 43.1 | 30 | 130 |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.125 µg/L | 44.5 | 30 | 130 |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.125 µg/L | 55.8 | 30 | 130 |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.125 µg/L | 47.2 | 30 | 130 |
| | | EP231X-LL: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.05 µg/L | 58.4 | 30 | 130 |
| | | EP231X-LL: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.05 µg/L | 52.8 | 30 | 130 |
| | | EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2158354) | | | | | |
| EM1900940-002 | Anonymous | EP231X-LL: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 µg/L | 92.4 | 50 | 130 |
| | | EP231X-LL: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 µg/L | 110 | 50 | 130 |
| | | EP231X-LL: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 µg/L | 92.8 | 50 | 130 |
| | | EP231X-LL: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 µg/L | 69.4 | 50 | 130 |

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1902823

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 2 |
| Order number | : 60592634 / 1.0 | Quote number | : EB2017AECOMAU0014 (EN/004/16) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : GIJPP | | |
| Sampler | : [REDACTED] | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 27-Feb-2019 15:00 | Issue Date | : 27-Feb-2019 |
| Client Requested Due Date | : 06-Mar-2019 | Scheduled Reporting Date | : 04-Mar-2019 |

Delivery Details

| | | | |
|----------------------|-----------|------------------------------------|-----------------------|
| Mode of Delivery | : Carrier | Security Seal | : Not Available |
| No. of coolers/boxes | : 1 | Temperature | : 4.1°C - Ice present |
| Receipt Detail | : | No. of samples received / analysed | : 1 / 1 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

□ **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - EG050T
Total Hexavalent Chromium | WATER - NT-14
Extended Water Suite B | WATER - W-04
TRH/BTEXN | WATER - W-23
SVOC/VOC | WATER - W-30
11 Metals |
|----------------------|-----------------------------|------------------|---|---|---------------------------|--------------------------|---------------------------|
| EM1902823-001 | 27-Feb-2019 00:00 | GW03_27/2/19 | □ | □ | □ | □ | □ |

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email

AP_CustomerService.ANZ@aecom.com

- Chain of Custody (CoC) (COC)

Email

AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- Electronic SRN for EQUIS (ESRN_EQUIS)

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- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
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- Electronic SRN for EQUIS (ESRN_EQUIS)

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ANZ FQM - Generic Chain of Custody Form

| | | | | | | | |
|---|--|---|--|---|--|-----------------------------|--|
| CONSULTANT: AECOM Australia | | ADDRESS / OFFICE: Melbourne | | SAMPLER: [REDACTED] | | DESTINATION LABORATORY: ALS | |
| PROJECT MANAGER (PM): [REDACTED] | | SITE: GUYP | | MOBILE: [REDACTED] | | | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO. [REDACTED] | | EMAIL REPORT TO: [REDACTED]@aecom.com | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices): | | | |
| FOR LABORATORY USE ONLY
COOLER SEAL (if applicable): [REDACTED]
SAMPLE TEMPERATURE: [REDACTED]
CHILLED: [REDACTED] | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
Separate from MW18-STUCK near | | | | | |
| | | SAMPLE INFORMATION (note: S = Soil, W = Water)
MATRIX: W DATE: 27/2/19 TIME: 2.05 PM, 8.15 PM, 7.15 PM | | | | | |
| SAMPLE ID: GN03-27/2/19
ALS ID: 1 | | DATE: 27/2/19
TIME: 2.05 PM, 8.15 PM, 7.15 PM | | TYPE / CODE: 2.05 PM, 8.15 PM, 7.15 PM | | TOTAL BOTTLES: 7 | |
| W-6 (TRH/TEXN/PS)
W-2 (MNA / Nitrate / Sulfate)
W-16 (Cd, Cr, Pb, Se, V, Zn) | | W-23
W-14
W-10 | | W-6 (TRH/TEXN/PS)
W-2 (MNA / Nitrate / Sulfate)
W-16 (Cd, Cr, Pb, Se, V, Zn) | | HOLD | |
| Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | | | | | | | |

Environmental Division
Melbourne
Work Order Reference
EM19028

Barcode: [Barcode]

Telephone: +61-3-9549 9600

RECEIVED BY: [Signature]

RELINQUISHED BY: [Signature]

| | | | | | |
|--|--|--|--|--|--|
| Name: [Signature] Date: 27/2/19
Of: [Signature] Time: 2.05 PM | | Name: [Signature] Date: 27/2/19
Of: [Signature] Time: 2.05 PM | | Name: [Signature] Date: 27/2/19
Of: [Signature] Time: 2.05 PM | |
| RECEIVED BY: [Signature] | | RECEIVED BY: [Signature] | | RECEIVED BY: [Signature] | |
| Con't Note No: [REDACTED]
Transport Co: [REDACTED] | | Con't Note No: [REDACTED]
Transport Co: [REDACTED] | | Con't Note No: [REDACTED]
Transport Co: [REDACTED] | |

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved Plastic; SH = Sodium Hydroxide/Cu Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; R = Unpreserved Bag
 Soil Container Codes: Jar = Unpreserved Glass Jar

CERTIFICATE OF ANALYSIS

Work Order : **EM1902823**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number : 60592634 / 1.0
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP
Quote number : EN/004/16
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 12
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 27-Feb-2019 15:00
Date Analysis Commenced : 27-Feb-2019
Issue Date : 05-Mar-2019 12:54



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| Signatories | Position | Accreditation Category |
|--|-------------------------------------|---------------------------------------|
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EA010-P: Electrical Conductivity @ 25°C was analysed by manual method (EA010).
- ED093F:EM1902823_001 has been confirmed for major cations by re-preparation and re-analysis.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- ED041G: EM1902823-001 Poor matrix spike recovery for sulfate due to sample matrix. Confirmed by re-extraction and re-analysis.
- EP075: 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- EA016: Calculated TDS is determined from Electrical conductivity using a conversion factor of 0.65.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.



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|---|-------------|--------|------------------|-------------------|-------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | Client sample ID | GW03_27/2/19 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | 27-Feb-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1902823-001 | ----- | ----- | ----- | ----- |
| Result | | | | ---- | ---- | ---- | ---- | ---- |
| EA005P: pH by PC Titrator | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | 6.90 | ---- | ---- | ---- | ---- |
| EA006: Sodium Adsorption Ratio (SAR) | | | | | | | | |
| ^ Sodium Adsorption Ratio | ---- | 0.01 | - | 18.7 | ---- | ---- | ---- | ---- |
| EA010P: Conductivity by PC Titrator | | | | | | | | |
| Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | 9710 | ---- | ---- | ---- | ---- |
| EA016: Calculated TDS (from Electrical Conductivity) | | | | | | | | |
| Total Dissolved Solids (Calc.) | ---- | 1 | mg/L | 6310 | ---- | ---- | ---- | ---- |
| EA065: Total Hardness as CaCO3 | | | | | | | | |
| Total Hardness as CaCO3 | ---- | 1 | mg/L | 1310 | ---- | ---- | ---- | ---- |
| ED037P: Alkalinity by PC Titrator | | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | ---- | ---- | ---- | ---- |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | ---- | ---- | ---- | ---- |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 361 | ---- | ---- | ---- | ---- |
| Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 361 | ---- | ---- | ---- | ---- |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | | |
| Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | 364 | ---- | ---- | ---- | ---- |
| ED045G: Chloride by Discrete Analyser | | | | | | | | |
| Chloride | 16887-00-6 | 1 | mg/L | 3460 | ---- | ---- | ---- | ---- |
| ED093F: Dissolved Major Cations | | | | | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | 179 | ---- | ---- | ---- | ---- |
| Magnesium | 7439-95-4 | 1 | mg/L | 210 | ---- | ---- | ---- | ---- |
| Sodium | 7440-23-5 | 1 | mg/L | 1560 | ---- | ---- | ---- | ---- |
| Potassium | 7440-09-7 | 1 | mg/L | 3 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | |
| Aluminium | 7429-90-5 | 0.01 | mg/L | 0.03 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | 0.002 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | ---- | ---- | ---- | ---- |
| Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | 0.002 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | 0.016 | ---- | ---- | ---- | ---- |
| Iron | 7439-89-6 | 0.05 | mg/L | <0.05 | ---- | ---- | ---- | ---- |



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|---|-------------------|--------|-------|------------------|----------------------|-------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | GW03_27/2/19 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1902823-001 | ----- | ----- | ----- | ----- |
| | | | | Result | | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050T: Total Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | 0.3 | ---- | ---- | ---- | ---- |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | | 0.14 | ---- | ---- | ---- | ---- |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | | | |
| Nitrite as N | 14797-65-0 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK058G: Nitrate as N by Discrete Analyser | | | | | | | | | |
| Nitrate as N | 14797-55-8 | 0.01 | mg/L | | 0.01 | ---- | ---- | ---- | ---- |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | | | |
| Nitrite + Nitrate as N | ---- | 0.01 | mg/L | | 0.01 | ---- | ---- | ---- | ---- |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | | | |
| Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | | 0.2 | ---- | ---- | ---- | ---- |
| EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser | | | | | | | | | |
| ^ Total Nitrogen as N | ---- | 0.1 | mg/L | | 0.2 | ---- | ---- | ---- | ---- |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | | 0.06 | ---- | ---- | ---- | ---- |
| EK071G: Reactive Phosphorus as P by discrete analyser | | | | | | | | | |
| Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | | 0.04 | ---- | ---- | ---- | ---- |
| EN055: Ionic Balance | | | | | | | | | |
| Total Anions | ---- | 0.01 | meq/L | | 112 | ---- | ---- | ---- | ---- |
| Total Cations | ---- | 0.01 | meq/L | | 94.1 | ---- | ---- | ---- | ---- |
| Ionic Balance | ---- | 0.01 | % | | 8.83 | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| Toluene | 108-88-3 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Styrene | 100-42-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Isopropylbenzene | 98-82-8 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |



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|---|------------|-----|------|------------------|-------------------|-------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | GW03_27/2/19 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1902823-001 | ----- | ----- | ----- | ----- |
| | | | | Result | ---- | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons - Continued | | | | | | | | | |
| n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074B: Oxygenated Compounds | | | | | | | | | |
| Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| EP074C: Sulfonated Compounds | | | | | | | | | |
| Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074D: Fumigants | | | | | | | | | |
| 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| Chloromethane | 74-87-3 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| Bromomethane | 74-83-9 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| Chloroethane | 75-00-3 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Iodomethane | 74-88-4 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| 1,1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |



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|--|------------|-----|------|-----------------------------|-------------------|-------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | GW03_27/2/19 | ---- | ---- | ---- | ---- |
| | | | | Client sampling date / time | 27-Feb-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1902823-001 | ----- | ----- | ----- | ----- |
| | | | | | Result | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Dibromomethane | 74-95-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,3-Dichloropropane | 142-28-9 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| trans-1,4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| cis-1,4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2,3-Trichloropropane | 96-18-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Pentachloroethane | 76-01-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Bromobenzene | 108-86-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 2-Chlorotoluene | 95-49-8 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 4-Chlorotoluene | 106-43-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| 1,2,3-Trichlorobenzene | 87-61-6 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Bromodichloromethane | 75-27-4 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Dibromochloromethane | 124-48-1 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| Bromoform | 75-25-2 | 5 | µg/L | | <5 | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds | | | | | | | | | |
| Phenol | 108-95-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol | 95-57-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |



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|---|-------------------|-----|------|------------------|-------------------|-------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | GW03_27/2/19 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1902823-001 | ----- | ----- | ----- | ----- |
| | | | | Result | | ---- | ---- | ---- | ---- |
| EP075A: Phenolic Compounds - Continued | | | | | | | | | |
| 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 4 | µg/L | <4 | | ---- | ---- | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 4 | µg/L | <4 | | ---- | ---- | ---- | ---- |
| 7,12-Dimethylbenzo(a)anthracene | 57-97-6 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| ^ Sum of PAHs | ---- | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| EP075C: Phthalate Esters | | | | | | | | | |
| Dimethyl phthalate | 131-11-3 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Diethyl phthalate | 84-66-2 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |
| bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | <10 | | ---- | ---- | ---- | ---- |
| Di-n-octylphthalate | 117-84-0 | 2 | µg/L | <2 | | ---- | ---- | ---- | ---- |



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|---|------------------|-----|------|------------------|-------------------|-------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | GW03_27/2/19 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1902823-001 | ----- | ----- | ----- | ----- |
| | | | | | Result | ---- | ---- | ---- | ---- |
| EP075C: Phthalate Esters - Continued | | | | | | | | | |
| EP075D: Nitrosamines | | | | | | | | | |
| N-Nitrosomethylethylamine | 10595-95-6 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| N-Nitrosodiethylamine | 55-18-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| N-Nitrosopyrrolidine | 930-55-2 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| N-Nitrosomorpholine | 59-89-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| N-Nitrosodi-n-propylamine | 621-64-7 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| N-Nitrosopiperidine | 100-75-4 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| N-Nitrosodibutylamine | 924-16-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| N-Nitrosodiphenyl & Diphenylamine | 86-30-6 122-39-4 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| Methapyrilene | 91-80-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| EP075E: Nitroaromatics and Ketones | | | | | | | | | |
| 2-Picoline | 109-06-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Acetophenone | 98-86-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Nitrobenzene | 98-95-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Isophorone | 78-59-1 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 2,6-Dinitrotoluene | 606-20-2 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 2,4-Dinitrotoluene | 121-14-2 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| 1-Naphthylamine | 134-32-7 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 4-Nitroquinoline-N-oxide | 56-57-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 5-Nitro-o-toluidine | 99-55-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Azobenzene | 103-33-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 1,3,5-Trinitrobenzene | 99-35-4 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Phenacetin | 62-44-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 4-Aminobiphenyl | 92-67-1 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Pentachloronitrobenzene | 82-68-8 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Pronamide | 23950-58-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Dimethylaminoazobenzene | 60-11-7 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Chlorobenzilate | 510-15-6 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| EP075F: Haloethers | | | | | | | | | |
| Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |



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|---|------------|-----|------|------------------|----------------------|-------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | GW03_27/2/19 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1902823-001 | ----- | ----- | ----- | ----- |
| | | | | | Result | ---- | ---- | ---- | ---- |
| EP075G: Chlorinated Hydrocarbons | | | | | | | | | |
| 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Hexachloroethane | 67-72-1 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Hexachloropropylene | 1888-71-7 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | | <10 | ---- | ---- | ---- | ---- |
| Pentachlorobenzene | 608-93-5 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| EP075H: Anilines and Benzidines | | | | | | | | | |
| Aniline | 62-53-3 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4-Chloroaniline | 106-47-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 2-Nitroaniline | 88-74-4 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| 3-Nitroaniline | 99-09-2 | 4 | µg/L | | <4 | ---- | ---- | ---- | ---- |
| Dibenzofuran | 132-64-9 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4-Nitroaniline | 100-01-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Carbazole | 86-74-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| alpha-Endosulfan | 959-98-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4,4'-DDE | 72-55-9 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Endrin | 72-20-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| beta-Endosulfan | 33213-65-9 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| 4,4'-DDD | 72-54-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 2 | µg/L | | <2 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | GW03_27/2/19 | ---- | ---- | ---- | ---- |
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1902823-001 | ----- | ----- | ----- | ----- |
| | | | | Result | ---- | ---- | ---- | ---- | ---- |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| 4,4'-DDT | 50-29-3 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5 | 4 | µg/L | <4 | ---- | ---- | ---- | ---- | ---- |
| | 0-2 | | | | | | | | |
| EP075J: Organophosphorus Pesticides | | | | | | | | | |
| Dichlorvos | 62-73-7 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Dimethoate | 60-51-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Diazinon | 333-41-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Malathion | 121-75-5 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Fenthion | 55-38-9 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Chlorpyrifos | 2921-88-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Chlorfenvinphos | 470-90-6 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Prothiofos | 34643-46-4 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| Ethion | 563-12-2 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | <20 | ---- | ---- | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | ---- | ---- | ---- | ---- | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | <20 | ---- | ---- | ---- | ---- | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | <100 | ---- | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | <1 | ---- | ---- | ---- | ---- | ---- |
| Toluene | 108-88-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |



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|---|-------------------|-----|------|-----------------------------|----------------------|-------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | GW03_27/2/19 | ---- | ---- | ---- | ---- |
| | | | | Client sampling date / time | 27-Feb-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1902823-001 | ----- | ----- | ----- | ----- |
| | | | | Result | ---- | ---- | ---- | ---- | ---- |
| EP080: BTEXN - Continued | | | | | | | | | |
| Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | <2 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | <1 | ---- | ---- | ---- | ---- | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | 99.3 | ---- | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | 94.5 | ---- | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | 108 | ---- | ---- | ---- | ---- | ---- |
| EP075S: Acid Extractable Surrogates | | | | | | | | | |
| 2-Fluorophenol | 367-12-4 | 2 | % | 27.2 | ---- | ---- | ---- | ---- | ---- |
| Phenol-d6 | 13127-88-3 | 2 | % | 33.6 | ---- | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 2 | % | 81.8 | ---- | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 2 | % | 82.1 | ---- | ---- | ---- | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 2 | % | 91.3 | ---- | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 2 | % | 73.9 | ---- | ---- | ---- | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 2 | % | 92.5 | ---- | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 2 | % | 114 | ---- | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 2 | % | 108 | ---- | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | 99.8 | ---- | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | 87.5 | ---- | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | 105 | ---- | ---- | ---- | ---- | ---- |



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|--|-------------------|------------------|-------------|
| Sub-Matrix: WATER | | □□□□□ □□□□ □ s □ | |
| <i>Compound</i> | <i>CAS Number</i> | <i>□□%</i> | <i>□□ □</i> |
| EP074S: VOC Surrogates | | | |
| 1.2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075S: Acid Extractable Surrogates | | | |
| 2-Fluorophenol | 367-12-4 | 10 | 75 |
| Phenol-d6 | 13127-88-3 | 10 | 65 |
| 2-Chlorophenol-D4 | 93951-73-6 | 21 | 103 |
| 2.4.6-Tribromophenol | 118-79-6 | 22 | 120 |
| EP075T: Base/Neutral Extractable Surrogates | | | |
| Nitrobenzene-D5 | 4165-60-0 | 24 | 116 |
| 1.2-Dichlorobenzene-D4 | 2199-69-1 | 23 | 99 |
| 2-Fluorobiphenyl | 321-60-8 | 32 | 114 |
| Anthracene-d10 | 1719-06-8 | 47 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 44 | 124 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1.2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1902823 | Page | : 1 of 15 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 27-Feb-2019 |
| Order number | : 60592634 / 1.0 | Date Analysis Commenced | : 27-Feb-2019 |
| C-O-C number | : ---- | Issue Date | : 05-Mar-2019 |
| Sampler | : [REDACTED] | | |
| Site | : GIJPP | | |
| Quote number | : EN/004/16 | | |
| No. of samples received | : 1 | | |
| No. of samples analysed | : 1 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]

Senior Inorganic Instrument Chemist
Senior Organic Chemist

Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2209484) | | | | | | | | | |
| EM1902823-001 | GW03_27/2/19 | EA005-P: pH Value | ---- | 0.01 | pH Unit | 6.90 | 6.88 | 0.290 | 0% - 20% |
| EA010P: Conductivity by PC Titrator (QC Lot: 2209481) | | | | | | | | | |
| EM1902806-006 | Anonymous | EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | 54500 | 54700 | 0.366 | 0% - 20% |
| EM1902808-009 | Anonymous | EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | 900 | 900 | 0.00 | 0% - 20% |
| ED037P: Alkalinity by PC Titrator (QC Lot: 2209483) | | | | | | | | | |
| EM1902808-009 | Anonymous | ED037-P: Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 29 | 29 | 0.00 | 0% - 20% |
| | | ED037-P: Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 29 | 29 | 0.00 | 0% - 20% |
| EM1902823-001 | GW03_27/2/19 | ED037-P: Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Carbonate Alkalinity as CaCO3 | 3812-32-6 | 1 | mg/L | <1 | <1 | 0.00 | No Limit |
| | | ED037-P: Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 1 | mg/L | 361 | 357 | 1.22 | 0% - 20% |
| | | ED037-P: Total Alkalinity as CaCO3 | ---- | 1 | mg/L | 361 | 357 | 1.22 | 0% - 20% |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 2209523) | | | | | | | | | |
| EM1902822-009 | Anonymous | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | 900 | 888 | 1.44 | 0% - 20% |
| ED045G: Chloride by Discrete Analyser (QC Lot: 2209522) | | | | | | | | | |
| EM1902821-007 | Anonymous | ED045G: Chloride | 16887-00-6 | 1 | mg/L | 1380 | 1420 | 3.06 | 0% - 20% |
| ED093F: Dissolved Major Cations (QC Lot: 2211940) | | | | | | | | | |
| EM1902688-002 | Anonymous | ED093F: Calcium | 7440-70-2 | 1 | mg/L | 239 | 240 | 0.736 | 0% - 20% |
| | | ED093F: Magnesium | 7439-95-4 | 1 | mg/L | 18 | 18 | 0.00 | 0% - 50% |
| | | ED093F: Sodium | 7440-23-5 | 1 | mg/L | 20 | 20 | 0.00 | 0% - 20% |
| | | ED093F: Potassium | 7440-09-7 | 1 | mg/L | 15 | 15 | 0.00 | 0% - 50% |
| EM1902806-002 | Anonymous | ED093F: Calcium | 7440-70-2 | 1 | mg/L | 282 | 282 | 0.00 | 0% - 20% |
| | | ED093F: Magnesium | 7439-95-4 | 1 | mg/L | 828 | 819 | 1.11 | 0% - 20% |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| ED093F: Dissolved Major Cations (QC Lot: 2211940) - continued | | | | | | | | | |
| EM1902806-002 | Anonymous | ED093F: Sodium | 7440-23-5 | 1 | mg/L | 4000 | 3950 | 1.27 | 0% - 20% |
| | | ED093F: Potassium | 7440-09-7 | 1 | mg/L | 54 | 54 | 1.97 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2211942) | | | | | | | | | |
| EM1902806-001 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | 0.023 | 0.023 | 0.00 | 0% - 20% |
| | | EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | 0.016 | 0.017 | 0.00 | 0% - 50% |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | 0.02 | 0.02 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2211939) | | | | | | | | | |
| EM1902677-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | 0.0003 | <0.0001 | 93.9 | No Limit |
| EG050T: Total Hexavalent Chromium (QC Lot: 2210346) | | | | | | | | | |
| EM1902823-001 | GW03_27/2/19 | EG050T: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2209485) | | | | | | | | | |
| EM1902823-001 | GW03_27/2/19 | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.3 | 0.3 | 0.00 | No Limit |
| EK055G: Ammonia as N by Discrete Analyser (QC Lot: 2210801) | | | | | | | | | |
| EM1902808-005 | Anonymous | EK055G: Ammonia as N | 7664-41-7 | 0.01 | mg/L | 20.4 | 20.5 | 0.814 | 0% - 20% |
| EK057G: Nitrite as N by Discrete Analyser (QC Lot: 2209521) | | | | | | | | | |
| EM1902815-002 | Anonymous | EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1902821-007 | Anonymous | EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2210800) | | | | | | | | | |
| EM1902805-001 | Anonymous | EK059G: Nitrite + Nitrate as N | ---- | 0.01 | mg/L | 0.03 | <0.01 | 90.4 | No Limit |
| EM1902808-001 | Anonymous | EK059G: Nitrite + Nitrate as N | ---- | 0.01 | mg/L | 1.85 | 1.71 | 7.80 | 0% - 20% |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 2210225) | | | | | | | | | |
| EM1902815-003 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 11.3 | 11.6 | 2.89 | 0% - 20% |
| EM1902834-007 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | 1.9 | 2.0 | 0.00 | 0% - 50% |
| EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 2210224) | | | | | | | | | |
| EM1902815-003 | Anonymous | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 15.2 | 15.3 | 0.843 | 0% - 20% |
| EM1902834-007 | Anonymous | EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | 0.02 | 0.04 | 36.8 | No Limit |
| EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 2209517) | | | | | | | | | |
| EM1902821-005 | Anonymous | EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | 0.40 | 0.38 | 4.28 | 0% - 20% |
| EM1902805-001 | Anonymous | EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | 0.02 | <0.01 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2211540) | | | | | | | | | |
| EM1902873-008 | Anonymous | EP074: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2211540) - continued | | | | | | | | | |
| EM1902873-008 | Anonymous | EP074: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.3.5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit | | |
| EP074B: Oxygenated Compounds (QC Lot: 2211540) | | | | | | | | | |
| EM1902873-008 | Anonymous | EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074C: Sulfonated Compounds (QC Lot: 2211540) | | | | | | | | | |
| EM1902873-008 | Anonymous | EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | 7 | 20 | 101 | No Limit |
| EP074D: Fumigants (QC Lot: 2211540) | | | | | | | | | |
| EM1902873-008 | Anonymous | EP074: 2.2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2211540) | | | | | | | | | |
| EM1902873-008 | Anonymous | EP074: 1.1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2211540) - continued | | | | | | | | | |
| EM1902873-008 | Anonymous | EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| | | EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2211540) | | | | | | | | | |
| EM1902873-008 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2211540) | | | | | | | | | |
| EM1902873-008 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2211539) | | | | | | | | | |
| EM1902757-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | 1380 | 1380 | 0.00 | No Limit |
| EM1902873-008 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2211539) | | | | | | | | | |
| EM1902757-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | 1340 | 1340 | 0.00 | No Limit |
| EM1902873-008 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2211539) | | | | | | | | | |
| EM1902757-001 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | 635 | 614 | 3.35 | 0% - 20% |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | 2 | 2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | 52 | 51 | 2.20 | 0% - 20% |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |

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 Work Order : EM1902823
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080: BTEXN (QC Lot: 2211539) - continued | | | | | | | | | |
| EM1902757-001 | Anonymous | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | 19 | 18 | 0.00 | No Limit |
| EM1902873-008 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|-------|-----------------------------|---------------------------------------|--------------------|---------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | LCS | Low |
| EA010P: Conductivity by PC Titrator (QCLot: 2209481) | | | | | | | | |
| EA010-P: Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | <1 | 1412 µS/cm | 99.4 | 85 | 119 |
| ED037P: Alkalinity by PC Titrator (QCLot: 2209483) | | | | | | | | |
| ED037-P: Total Alkalinity as CaCO3 | ---- | ---- | mg/L | ---- | 200 mg/L | 102 | 88 | 112 |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2209523) | | | | | | | | |
| ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 1 | mg/L | <1 | 25 mg/L | 104 | 86 | 115 |
| | | | | <1 | 100 mg/L | 97.4 | 86 | 115 |
| ED045G: Chloride by Discrete Analyser (QCLot: 2209522) | | | | | | | | |
| ED045G: Chloride | 16887-00-6 | 1 | mg/L | <1 | 10 mg/L | 114 | 86 | 120 |
| | | | | <1 | 1000 mg/L | 115 | 86 | 120 |
| ED093F: Dissolved Major Cations (QCLot: 2211940) | | | | | | | | |
| ED093F: Calcium | 7440-70-2 | 1 | mg/L | <1 | 5 mg/L | 105 | 92 | 113 |
| ED093F: Magnesium | 7439-95-4 | 1 | mg/L | <1 | 5 mg/L | 99.6 | 87 | 114 |
| ED093F: Sodium | 7440-23-5 | 1 | mg/L | <1 | 50 mg/L | 101 | 88 | 113 |
| ED093F: Potassium | 7440-09-7 | 1 | mg/L | <1 | 50 mg/L | 98.0 | 87 | 112 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2211942) | | | | | | | | |
| EG020A-F: Aluminium | 7429-90-5 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 94.5 | 93 | 105 |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 91.0 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 94.0 | 84 | 104 |
| EG020A-F: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.5 | 83 | 103 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 94.7 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 92.1 | 83 | 105 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.4 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 92.6 | 82 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 99.5 | 85 | 109 |
| EG020A-F: Iron | 7439-89-6 | 0.05 | mg/L | <0.05 | 0.5 mg/L | 97.9 | 94 | 106 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2211939) | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 92.7 | 76 | 114 |
| EG050T: Total Hexavalent Chromium (QCLot: 2210346) | | | | | | | | |
| EG050T: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 95.0 | 92 | 111 |
| EK040P: Fluoride by PC Titrator (QCLot: 2209485) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 103 | 87 | 117 |
| EK055G: Ammonia as N by Discrete Analyser (QCLot: 2210801) | | | | | | | | |
| EK055G: Ammonia as N | 7664-41-7 | 0.01 | mg/L | <0.01 | 1 mg/L | 101 | 87 | 117 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EK057G: Nitrite as N by Discrete Analyser (QCLot: 2209521) | | | | | | | | |
| EK057G: Nitrite as N | 14797-65-0 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 101 | 92 | 111 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2210800) | | | | | | | | |
| EK059G: Nitrite + Nitrate as N | ---- | 0.01 | mg/L | <0.01 | 0.5 mg/L | 98.8 | 93 | 120 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2210225) | | | | | | | | |
| EK061G: Total Kjeldahl Nitrogen as N | ---- | 0.1 | mg/L | <0.1 | 5 mg/L | 92.3 | 70 | 117 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2210224) | | | | | | | | |
| EK067G: Total Phosphorus as P | ---- | 0.01 | mg/L | <0.01 | 2.21 mg/L | 102 | 72 | 114 |
| EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2209517) | | | | | | | | |
| EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 106 | 93 | 113 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2211540) | | | | | | | | |
| EP074: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 99.5 | 76 | 119 |
| EP074: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 95.3 | 76 | 118 |
| EP074: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 97.2 | 76 | 118 |
| EP074: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 97.2 | 75 | 118 |
| | 106-42-3 | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 101 | 79 | 116 |
| EP074: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 101 | 79 | 118 |
| EP074: Isopropylbenzene | 98-82-8 | 5 | µg/L | <5 | 20 µg/L | 101 | 72 | 118 |
| EP074: n-Propylbenzene | 103-65-1 | 5 | µg/L | <5 | 20 µg/L | 84.8 | 66 | 116 |
| EP074: 1,3,5-Trimethylbenzene | 108-67-8 | 5 | µg/L | <5 | 20 µg/L | 86.4 | 69 | 114 |
| EP074: sec-Butylbenzene | 135-98-8 | 5 | µg/L | <5 | 20 µg/L | 84.0 | 67 | 115 |
| EP074: 1,2,4-Trimethylbenzene | 95-63-6 | 5 | µg/L | <5 | 20 µg/L | 89.3 | 70 | 113 |
| EP074: tert-Butylbenzene | 98-06-6 | 5 | µg/L | <5 | 20 µg/L | 86.1 | 70 | 115 |
| EP074: p-Isopropyltoluene | 99-87-6 | 5 | µg/L | <5 | 20 µg/L | 89.0 | 67 | 116 |
| EP074: n-Butylbenzene | 104-51-8 | 5 | µg/L | <5 | 20 µg/L | 88.3 | 60 | 116 |
| EP074B: Oxygenated Compounds (QCLot: 2211540) | | | | | | | | |
| EP074: Vinyl Acetate | 108-05-4 | 50 | µg/L | <50 | 200 µg/L | 111 | 68 | 123 |
| EP074: 2-Butanone (MEK) | 78-93-3 | 50 | µg/L | <50 | 200 µg/L | 121 | 68 | 132 |
| EP074: 4-Methyl-2-pentanone (MIBK) | 108-10-1 | 50 | µg/L | <50 | 200 µg/L | 118 | 75 | 130 |
| EP074: 2-Hexanone (MBK) | 591-78-6 | 50 | µg/L | <50 | 200 µg/L | 122 | 74 | 130 |
| EP074C: Sulfonated Compounds (QCLot: 2211540) | | | | | | | | |
| EP074: Carbon disulfide | 75-15-0 | 5 | µg/L | <5 | 20 µg/L | 91.3 | 55 | 125 |
| EP074D: Fumigants (QCLot: 2211540) | | | | | | | | |
| EP074: 2,2-Dichloropropane | 594-20-7 | 5 | µg/L | <5 | 20 µg/L | 95.9 | 65 | 120 |
| EP074: 1,2-Dichloropropane | 78-87-5 | 5 | µg/L | <5 | 20 µg/L | 99.5 | 78 | 116 |
| EP074: cis-1,3-Dichloropropylene | 10061-01-5 | 5 | µg/L | <5 | 20 µg/L | 99.8 | 76 | 112 |
| EP074: trans-1,3-Dichloropropylene | 10061-02-6 | 5 | µg/L | <5 | 20 µg/L | 104 | 76 | 112 |
| EP074: 1,2-Dibromoethane (EDB) | 106-93-4 | 5 | µg/L | <5 | 20 µg/L | 106 | 79 | 117 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2211540) | | | | | | | | |
| EP074: Dichlorodifluoromethane | 75-71-8 | 50 | µg/L | <50 | 200 µg/L | 85.4 | 50 | 139 |
| EP074: Chloromethane | 74-87-3 | 50 | µg/L | <50 | 200 µg/L | 102 | 59 | 135 |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 95.6 | 53 | 135 |
| EP074: Bromomethane | 74-83-9 | 50 | µg/L | <50 | 200 µg/L | 84.5 | 52 | 125 |
| EP074: Chloroethane | 75-00-3 | 50 | µg/L | <50 | 200 µg/L | 97.5 | 62 | 128 |
| EP074: Trichlorofluoromethane | 75-69-4 | 50 | µg/L | <50 | 200 µg/L | 93.0 | 62 | 125 |
| EP074: 1.1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 89.3 | 63 | 124 |
| EP074: Iodomethane | 74-88-4 | 5 | µg/L | <5 | 20 µg/L | 71.4 | 31 | 126 |
| EP074: trans-1.2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 91.7 | 68 | 119 |
| EP074: 1.1-Dichloroethane | 75-34-3 | 5 | µg/L | <5 | 20 µg/L | 98.7 | 74 | 119 |
| EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 98.3 | 77 | 118 |
| EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 91.3 | 68 | 119 |
| EP074: 1.1-Dichloropropylene | 563-58-6 | 5 | µg/L | <5 | 20 µg/L | 89.6 | 66 | 118 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 90.6 | 62 | 117 |
| EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 102 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 95.0 | 67 | 120 |
| EP074: Dibromomethane | 74-95-3 | 5 | µg/L | <5 | 20 µg/L | 104 | 80 | 116 |
| EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 104 | 84 | 117 |
| EP074: 1.3-Dichloropropane | 142-28-9 | 5 | µg/L | <5 | 20 µg/L | 106 | 82 | 118 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 92.0 | 67 | 120 |
| EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 97.8 | 76 | 112 |
| EP074: trans-1.4-Dichloro-2-butene | 110-57-6 | 5 | µg/L | <5 | 20 µg/L | 118 | 71 | 121 |
| EP074: cis-1.4-Dichloro-2-butene | 1476-11-5 | 5 | µg/L | <5 | 20 µg/L | 114 | 68 | 116 |
| EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 116 | 81 | 124 |
| EP074: 1.2.3-Trichloropropane | 96-18-4 | 5 | µg/L | <5 | 20 µg/L | 114 | 80 | 123 |
| EP074: Pentachloroethane | 76-01-7 | 5 | µg/L | <5 | 20 µg/L | 92.5 | 70 | 110 |
| EP074: 1.2-Dibromo-3-chloropropane | 96-12-8 | 5 | µg/L | <5 | 20 µg/L | 110 | 74 | 113 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2211540) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 101 | 81 | 116 |
| EP074: Bromobenzene | 108-86-1 | 5 | µg/L | <5 | 20 µg/L | 92.4 | 78 | 114 |
| EP074: 2-Chlorotoluene | 95-49-8 | 5 | µg/L | <5 | 20 µg/L | 88.2 | 72 | 115 |
| EP074: 4-Chlorotoluene | 106-43-4 | 5 | µg/L | <5 | 20 µg/L | 88.0 | 71 | 114 |
| EP074: 1.2.3-Trichlorobenzene | 87-61-6 | 5 | µg/L | <5 | 20 µg/L | 94.8 | 73 | 120 |
| EP074G: Trihalomethanes (QCLot: 2211540) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 99.0 | 79 | 117 |
| EP074: Bromodichloromethane | 75-27-4 | 5 | µg/L | <5 | 20 µg/L | 104 | 78 | 113 |
| EP074: Dibromochloromethane | 124-48-1 | 5 | µg/L | <5 | 20 µg/L | 106 | 76 | 112 |
| EP074: Bromoform | 75-25-2 | 5 | µg/L | <5 | 20 µg/L | 112 | 73 | 112 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (QCLot: 2209324) | | | | | | | | |
| EP075: Phenol | 108-95-2 | 2 | µg/L | <2 | 10 µg/L | 35.8 | 20 | 48 |
| EP075: 2-Chlorophenol | 95-57-8 | 2 | µg/L | <2 | 10 µg/L | 76.2 | 49 | 100 |
| EP075: 2-Methylphenol | 95-48-7 | 2 | µg/L | <2 | 10 µg/L | 61.9 | 43 | 95 |
| EP075: 3- & 4-Methylphenol | 1319-77-3 | 2 | µg/L | <2 | 10 µg/L | 69.2 | 36 | 92 |
| EP075: 2-Nitrophenol | 88-75-5 | 2 | µg/L | <2 | 10 µg/L | 78.5 | 47 | 111 |
| EP075: 2,4-Dimethylphenol | 105-67-9 | 2 | µg/L | <2 | 10 µg/L | 85.2 | 49 | 110 |
| EP075: 2,4-Dichlorophenol | 120-83-2 | 2 | µg/L | <2 | 10 µg/L | 81.5 | 50 | 111 |
| EP075: 2,6-Dichlorophenol | 87-65-0 | 2 | µg/L | <2 | 10 µg/L | 82.4 | 53 | 108 |
| EP075: 4-Chloro-3-methylphenol | 59-50-7 | 2 | µg/L | <2 | 10 µg/L | 81.6 | 51 | 109 |
| EP075: 2,4,6-Trichlorophenol | 88-06-2 | 2 | µg/L | <2 | 10 µg/L | 85.2 | 48 | 114 |
| EP075: 2,4,5-Trichlorophenol | 95-95-4 | 2 | µg/L | <2 | 10 µg/L | 84.1 | 48 | 115 |
| EP075: Pentachlorophenol | 87-86-5 | 4 | µg/L | <4 | 10 µg/L | 58.4 | 14 | 124 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2209324) | | | | | | | | |
| EP075: Naphthalene | 91-20-3 | 2 | µg/L | <2 | 10 µg/L | 80.4 | 55 | 108 |
| EP075: 2-Methylnaphthalene | 91-57-6 | 2 | µg/L | <2 | 10 µg/L | 83.6 | 54 | 113 |
| EP075: 2-Chloronaphthalene | 91-58-7 | 2 | µg/L | <2 | 10 µg/L | 82.1 | 54 | 112 |
| EP075: Acenaphthylene | 208-96-8 | 2 | µg/L | <2 | 10 µg/L | 84.0 | 55 | 113 |
| EP075: Acenaphthene | 83-32-9 | 2 | µg/L | <2 | 10 µg/L | 84.3 | 58 | 110 |
| EP075: Fluorene | 86-73-7 | 2 | µg/L | <2 | 10 µg/L | 86.5 | 59 | 113 |
| EP075: Phenanthrene | 85-01-8 | 2 | µg/L | <2 | 10 µg/L | 85.5 | 61 | 112 |
| EP075: Anthracene | 120-12-7 | 2 | µg/L | <2 | 10 µg/L | 86.0 | 61 | 112 |
| EP075: Fluoranthene | 206-44-0 | 2 | µg/L | <2 | 10 µg/L | 87.4 | 61 | 114 |
| EP075: Pyrene | 129-00-0 | 2 | µg/L | <2 | 10 µg/L | 88.3 | 60 | 114 |
| EP075: N-2-Fluorenyl Acetamide | 53-96-3 | 2 | µg/L | <2 | 10 µg/L | 93.1 | 55 | 119 |
| EP075: Benz(a)anthracene | 56-55-3 | 2 | µg/L | <2 | 10 µg/L | 87.6 | 60 | 114 |
| EP075: Chrysene | 218-01-9 | 2 | µg/L | <2 | 10 µg/L | 89.4 | 60 | 116 |
| EP075: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 4 | µg/L | <4 | 20 µg/L | 86.1 | 60 | 114 |
| EP075: 7,12-Dimethylbenz(a)anthracene | 57-97-6 | 2 | µg/L | <2 | 10 µg/L | 86.3 | 55 | 140 |
| EP075: Benzo(a)pyrene | 50-32-8 | 2 | µg/L | <2 | 10 µg/L | 86.6 | 58 | 116 |
| EP075: 3-Methylcholanthrene | 56-49-5 | 2 | µg/L | <2 | 10 µg/L | 87.4 | 48 | 119 |
| EP075: Indeno(1,2,3.cd)pyrene | 193-39-5 | 2 | µg/L | <2 | 10 µg/L | 89.8 | 58 | 114 |
| EP075: Dibenzo(a,h)anthracene | 53-70-3 | 2 | µg/L | <2 | 10 µg/L | 93.7 | 57 | 115 |
| EP075: Benzo(g,h,i)perylene | 191-24-2 | 2 | µg/L | <2 | 10 µg/L | 96.4 | 57 | 117 |
| EP075C: Phthalate Esters (QCLot: 2209324) | | | | | | | | |
| EP075: Dimethyl phthalate | 131-11-3 | 2 | µg/L | <2 | 10 µg/L | 86.5 | 56 | 117 |
| EP075: Diethyl phthalate | 84-66-2 | 2 | µg/L | <2 | 10 µg/L | 86.4 | 61 | 115 |
| EP075: Di-n-butyl phthalate | 84-74-2 | 2 | µg/L | <2 | 10 µg/L | 91.8 | 66 | 117 |
| EP075: Butyl benzyl phthalate | 85-68-7 | 2 | µg/L | <2 | 10 µg/L | 89.3 | 61 | 116 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|---------------------|------|--------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP075C: Phthalate Esters (QCLot: 2209324) - continued | | | | | | | | |
| EP075: bis(2-ethylhexyl) phthalate | 117-81-7 | 10 | µg/L | <10 | 10 µg/L | 80.7 | 56 | 118 |
| EP075: Di-n-octylphthalate | 117-84-0 | 2 | µg/L | <2 | 10 µg/L | 85.7 | 62 | 115 |
| EP075D: Nitrosamines (QCLot: 2209324) | | | | | | | | |
| EP075: N-Nitrosomethylethylamine | 10595-95-6 | 2 | µg/L | <2 | 10 µg/L | 62.6 | 28 | 94 |
| EP075: N-Nitrosodiethylamine | 55-18-5 | 2 | µg/L | <2 | 10 µg/L | 76.9 | 45 | 110 |
| EP075: N-Nitrosopyrrolidine | 930-55-2 | 4 | µg/L | <4 | 10 µg/L | 60.6 | 37 | 84 |
| EP075: N-Nitrosomorpholine | 59-89-2 | 2 | µg/L | <2 | 10 µg/L | 58.9 | 33 | 81 |
| EP075: N-Nitrosodi-n-propylamine | 621-64-7 | 2 | µg/L | <2 | 10 µg/L | 85.7 | 52 | 115 |
| EP075: N-Nitrosopiperidine | 100-75-4 | 2 | µg/L | <2 | 10 µg/L | 82.6 | 48 | 112 |
| EP075: N-Nitrosodibutylamine | 924-16-3 | 2 | µg/L | <2 | 10 µg/L | 84.3 | 53 | 118 |
| EP075: N-Nitrosodiphenyl & Diphenylamine | 86-30-6
122-39-4 | 4 | µg/L | <4 | 10 µg/L | 85.9 | 59 | 114 |
| EP075: Methapyrilene | 91-80-5 | 2 | µg/L | <2 | 10 µg/L | 93.0 | 10 | 147 |
| EP075E: Nitroaromatics and Ketones (QCLot: 2209324) | | | | | | | | |
| EP075: 2-Picoline | 109-06-8 | 2 | µg/L | <2 | 10 µg/L | 58.3 | 20 | 105 |
| EP075: Acetophenone | 98-86-2 | 2 | µg/L | <2 | 10 µg/L | 83.6 | 55 | 110 |
| EP075: Nitrobenzene | 98-95-3 | 2 | µg/L | <2 | 10 µg/L | 79.2 | 51 | 111 |
| EP075: Isophorone | 78-59-1 | 2 | µg/L | <2 | 10 µg/L | 83.6 | 54 | 113 |
| EP075: 2,6-Dinitrotoluene | 606-20-2 | 4 | µg/L | <4 | 10 µg/L | 85.4 | 55 | 116 |
| EP075: 2,4-Dinitrotoluene | 121-14-2 | 4 | µg/L | <4 | 10 µg/L | 83.6 | 57 | 111 |
| EP075: 1-Naphthylamine | 134-32-7 | 2 | µg/L | <2 | 10 µg/L | 89.0 | 11 | 119 |
| EP075: 4-Nitroquinoline-N-oxide | 56-57-5 | 2 | µg/L | <2 | 10 µg/L | 103 | 42 | 148 |
| EP075: 5-Nitro-o-toluidine | 99-55-8 | 2 | µg/L | <2 | 10 µg/L | 87.1 | 51 | 121 |
| EP075: Azobenzene | 103-33-3 | 2 | µg/L | <2 | 10 µg/L | 85.6 | 58 | 114 |
| EP075: 1,3,5-Trinitrobenzene | 99-35-4 | 2 | µg/L | <2 | 10 µg/L | 76.9 | 37 | 123 |
| EP075: Phenacetin | 62-44-2 | 2 | µg/L | <2 | 10 µg/L | 82.7 | 47 | 102 |
| EP075: 4-Aminobiphenyl | 92-67-1 | 2 | µg/L | <2 | 10 µg/L | 75.6 | 24 | 149 |
| EP075: Pentachloronitrobenzene | 82-68-8 | 2 | µg/L | <2 | 10 µg/L | 83.9 | 57 | 114 |
| EP075: Pronamide | 23950-58-5 | 2 | µg/L | <2 | 10 µg/L | 87.9 | 62 | 113 |
| EP075: Dimethylaminoazobenzene | 60-11-7 | 2 | µg/L | <2 | 10 µg/L | 86.8 | 40 | 122 |
| EP075: Chlorobenzilate | 510-15-6 | 2 | µg/L | <2 | 10 µg/L | 88.6 | 58 | 116 |
| EP075F: Haloethers (QCLot: 2209324) | | | | | | | | |
| EP075: Bis(2-chloroethyl) ether | 111-44-4 | 2 | µg/L | <2 | 10 µg/L | 83.1 | 51 | 108 |
| EP075: Bis(2-chloroethoxy) methane | 111-91-1 | 2 | µg/L | <2 | 10 µg/L | 83.2 | 53 | 114 |
| EP075: 4-Chlorophenyl phenyl ether | 7005-72-3 | 2 | µg/L | <2 | 10 µg/L | 84.6 | 58 | 113 |
| EP075: 4-Bromophenyl phenyl ether | 101-55-3 | 2 | µg/L | <2 | 10 µg/L | 84.5 | 56 | 115 |
| EP075G: Chlorinated Hydrocarbons (QCLot: 2209324) | | | | | | | | |
| EP075: 1,4-Dichlorobenzene | 106-46-7 | 2 | µg/L | <2 | 10 µg/L | 76.4 | 52 | 103 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EP075G: Chlorinated Hydrocarbons (QCLot: 2209324) - continued | | | | | | | | |
| EP075: 1,3-Dichlorobenzene | 541-73-1 | 2 | µg/L | <2 | 10 µg/L | 76.0 | 52 | 104 |
| EP075: 1,2-Dichlorobenzene | 95-50-1 | 2 | µg/L | <2 | 10 µg/L | 78.0 | 51 | 106 |
| EP075: Hexachloroethane | 67-72-1 | 2 | µg/L | <2 | 10 µg/L | 75.5 | 49 | 106 |
| EP075: 1,2,4-Trichlorobenzene | 120-82-1 | 2 | µg/L | <2 | 10 µg/L | 80.2 | 50 | 111 |
| EP075: Hexachloropropylene | 1888-71-7 | 2 | µg/L | <2 | 10 µg/L | 76.4 | 47 | 110 |
| EP075: Hexachlorobutadiene | 87-68-3 | 2 | µg/L | <2 | 10 µg/L | 78.4 | 51 | 110 |
| EP075: Hexachlorocyclopentadiene | 77-47-4 | 10 | µg/L | <10 | 10 µg/L | 79.8 | 13 | 129 |
| EP075: Pentachlorobenzene | 608-93-5 | 2 | µg/L | <2 | 10 µg/L | 83.2 | 55 | 112 |
| EP075: Hexachlorobenzene (HCB) | 118-74-1 | 4 | µg/L | <4 | 20 µg/L | 85.5 | 57 | 115 |
| EP075H: Anilines and Benzidines (QCLot: 2209324) | | | | | | | | |
| EP075: Aniline | 62-53-3 | 2 | µg/L | <2 | 10 µg/L | 67.0 | 14 | 110 |
| EP075: 4-Chloroaniline | 106-47-8 | 2 | µg/L | <2 | 10 µg/L | 80.4 | 15 | 126 |
| EP075: 2-Nitroaniline | 88-74-4 | 4 | µg/L | <4 | 10 µg/L | 85.0 | 53 | 112 |
| EP075: 3-Nitroaniline | 99-09-2 | 4 | µg/L | <4 | 10 µg/L | 86.1 | 40 | 116 |
| EP075: Dibenzofuran | 132-64-9 | 2 | µg/L | <2 | 10 µg/L | 84.7 | 58 | 112 |
| EP075: 4-Nitroaniline | 100-01-8 | 2 | µg/L | <2 | 10 µg/L | 77.2 | 44 | 114 |
| EP075: Carbazole | 86-74-8 | 2 | µg/L | <2 | 10 µg/L | 88.1 | 61 | 116 |
| EP075: 3,3'-Dichlorobenzidine | 91-94-1 | 2 | µg/L | <2 | 10 µg/L | 102 | 42 | 135 |
| EP075I: Organochlorine Pesticides (QCLot: 2209324) | | | | | | | | |
| EP075: alpha-BHC | 319-84-6 | 2 | µg/L | <2 | 10 µg/L | 85.7 | 56 | 116 |
| EP075: beta-BHC | 319-85-7 | 2 | µg/L | <2 | 10 µg/L | 86.6 | 58 | 115 |
| EP075: gamma-BHC | 58-89-9 | 2 | µg/L | <2 | 10 µg/L | 89.6 | 59 | 115 |
| EP075: delta-BHC | 319-86-8 | 2 | µg/L | <2 | 10 µg/L | 85.7 | 60 | 114 |
| EP075: Heptachlor | 76-44-8 | 2 | µg/L | <2 | 10 µg/L | 81.9 | 56 | 114 |
| EP075: Aldrin | 309-00-2 | 2 | µg/L | <2 | 10 µg/L | 86.1 | 59 | 114 |
| EP075: Heptachlor epoxide | 1024-57-3 | 2 | µg/L | <2 | 10 µg/L | 86.9 | 58 | 116 |
| EP075: alpha-Endosulfan | 959-98-8 | 2 | µg/L | <2 | 10 µg/L | 89.5 | 59 | 116 |
| EP075: 4,4'-DDE | 72-55-9 | 2 | µg/L | <2 | 10 µg/L | 92.0 | 61 | 117 |
| EP075: Dieldrin | 60-57-1 | 2 | µg/L | <2 | 10 µg/L | 87.3 | 59 | 116 |
| EP075: Endrin | 72-20-8 | 2 | µg/L | <2 | 10 µg/L | 86.7 | 56 | 117 |
| EP075: beta-Endosulfan | 33213-65-9 | 2 | µg/L | <2 | 10 µg/L | 87.1 | 59 | 115 |
| EP075: 4,4'-DDD | 72-54-8 | 2 | µg/L | <2 | 10 µg/L | 88.1 | 61 | 117 |
| EP075: Endosulfan sulfate | 1031-07-8 | 2 | µg/L | <2 | 10 µg/L | 86.8 | 55 | 120 |
| EP075: 4,4'-DDT | 50-29-3 | 4 | µg/L | <4 | 10 µg/L | 85.8 | 46 | 123 |
| EP075J: Organophosphorus Pesticides (QCLot: 2209324) | | | | | | | | |
| EP075: Dichlorvos | 62-73-7 | 2 | µg/L | <2 | 10 µg/L | 83.4 | 56 | 111 |
| EP075: Dimethoate | 60-51-5 | 2 | µg/L | <2 | 10 µg/L | 85.0 | 44 | 105 |
| EP075: Diazinon | 333-41-5 | 2 | µg/L | <2 | 10 µg/L | 88.6 | 62 | 114 |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EP075J: Organophosphorus Pesticides (QCLot: 2209324) - continued | | | | | | | | |
| EP075: Chlorpyrifos-methyl | 5598-13-0 | 2 | µg/L | <2 | 10 µg/L | 85.2 | 58 | 115 |
| EP075: Malathion | 121-75-5 | 2 | µg/L | <2 | 10 µg/L | 84.9 | 59 | 120 |
| EP075: Fenthion | 55-38-9 | 2 | µg/L | <2 | 10 µg/L | 85.4 | 60 | 116 |
| EP075: Chlorpyrifos | 2921-88-2 | 2 | µg/L | <2 | 10 µg/L | 87.8 | 61 | 115 |
| EP075: Pirimphos-ethyl | 23505-41-1 | 2 | µg/L | <2 | 10 µg/L | 89.2 | 61 | 116 |
| EP075: Chlorfenvinphos | 470-90-6 | 2 | µg/L | <2 | 10 µg/L | 87.0 | 54 | 119 |
| EP075: Prothiofos | 34643-46-4 | 2 | µg/L | <2 | 10 µg/L | 87.4 | 60 | 116 |
| EP075: Ethion | 563-12-2 | 2 | µg/L | <2 | 10 µg/L | 91.1 | 59 | 118 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2209323) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4331 µg/L | 63.8 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 16952 µg/L | 70.1 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 8695 µg/L | 64.4 | 55 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2211539) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 117 | 65 | 126 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2209323) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 6292 µg/L | 64.3 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 22143 µg/L | 67.8 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1677 µg/L | 65.7 | 53 | 136 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2211539) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 116 | 64 | 124 |
| EP080: BTEXN (QCLot: 2211539) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 106 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 114 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 113 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3
106-42-3 | 2 | µg/L | <2 | 40 µg/L | 121 | 72 | 129 |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 121 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 110 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--|------------|--------------------------|-------------------------|---------------------|------|
| | | | | Spike
Concentration | Spike Recovery(%)
MS | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | | | Low | High |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2209523) | | | | | | | |
| EM1902823-001 | GW03_27/2/19 | ED041G: Sulfate as SO4 - Turbidimetric | 14808-79-8 | 100 mg/L | # 54.3 | 70 | 130 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|---|------------------|--------------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| ED045G: Chloride by Discrete Analyser (QCLot: 2209522) | | | | | | | |
| EM1902821-008 | Anonymous | ED045G: Chloride | 16887-00-6 | 400 mg/L | # Not Determined | 70 | 130 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2211942) | | | | | | | |
| EM1902806-001 | Anonymous | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 94.0 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 87.6 | 81 | 133 |
| | | EG020A-F: Chromium | 7440-47-3 | 0.2 mg/L | 91.3 | 71 | 135 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 92.2 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 84.2 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 95.8 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 87.8 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2211939) | | | | | | | |
| EM1902688-002 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 108 | 70 | 120 |
| EK055G: Ammonia as N by Discrete Analyser (QCLot: 2210801) | | | | | | | |
| EM1902808-006 | Anonymous | EK055G: Ammonia as N | 7664-41-7 | 1 mg/L | 123 | 70 | 130 |
| EK057G: Nitrite as N by Discrete Analyser (QCLot: 2209521) | | | | | | | |
| EM1902815-003 | Anonymous | EK057G: Nitrite as N | 14797-65-0 | 0.5 mg/L | 81.2 | 80 | 114 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2210800) | | | | | | | |
| EM1902805-002 | Anonymous | EK059G: Nitrite + Nitrate as N | ---- | 0.5 mg/L | 86.8 | 70 | 130 |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2210225) | | | | | | | |
| EM1902815-004 | Anonymous | EK061G: Total Kjeldahl Nitrogen as N | ---- | 5 mg/L | 109 | 70 | 130 |
| EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2210224) | | | | | | | |
| EM1902815-004 | Anonymous | EK067G: Total Phosphorus as P | ---- | 1 mg/L | 105 | 70 | 130 |
| EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2209517) | | | | | | | |
| EM1902805-002 | Anonymous | EK071G: Reactive Phosphorus as P | 14265-44-2 | 0.5 mg/L | 95.8 | 79 | 123 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2211540) | | | | | | | |
| EM1902816-003 | Anonymous | EP074: Benzene | 71-43-2 | 20 µg/L | 98.8 | 60 | 128 |
| | | EP074: Toluene | 108-88-3 | 20 µg/L | 102 | 64 | 132 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2211540) | | | | | | | |
| EM1902816-003 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 106 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 87.1 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2211540) | | | | | | | |
| EM1902816-003 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 102 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2211539) | | | | | | | |
| EM1902816-003 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 76.8 | 43 | 125 |



Sub-Matrix: WATER

| | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2211539) | | | | | | | |
| EM1902816-003 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 74.8 | 44 | 122 |
| EP080: BTEXN (QCLot: 2211539) | | | | | | | |
| EM1902816-003 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 91.3 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 98.6 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1902823**

Page : 1 of 10

Client : **AECOM Australia Pty Ltd**

Contact : [REDACTED]

Project : 60592634

Site : GIJPP

Sampler : [REDACTED]

Order number : 60592634 / 1.0

Laboratory : Environmental Division Melbourne

Telephone : +6138549 9645

Date Samples Received : 27-Feb-2019

Issue Date : 05-Mar-2019

No. of samples received : 1

No. of samples analysed : 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|---|----------------------|------------------|--|------------|----------------|---------|---|
| Matrix Spike (MS) Recoveries | | | | | | | |
| ED041G: Sulfate (Turbidimetric) as SO ₄ 2- by DA | EM1902823--001 | GW03_27/2/19 | Sulfate as SO ₄ - Turbidimetric | 14808-79-8 | 54.3 % | 70-130% | Recovery less than lower data quality objective |
| ED045G: Chloride by Discrete Analyser | EM1902821--008 | Anonymous | Chloride | 16887-00-6 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|--------------------------------|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| Semivolatile Organic Compounds | 0 | 3 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 18 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| Fluoride by PC Titrator | 0 | 2 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | 0 | 3 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 18 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 27-Feb-2019 | 27-Feb-2019 | ✔ |
| EA006: Sodium Adsorption Ratio (SAR) | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 27-Mar-2019 | ✔ |
| EA010P: Conductivity by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA010-P)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 28-Feb-2019 | 27-Mar-2019 | ✔ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA065: Total Hardness as CaCO3 | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 27-Mar-2019 | ✓ |
| ED037P: Alkalinity by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (ED037-P)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 28-Feb-2019 | 13-Mar-2019 | ✓ |
| ED041G: Sulfate (Turbidimetric) as SO4 2- by DA | | | | | | | |
| Clear Plastic Bottle - Natural (ED041G)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 27-Mar-2019 | ✓ |
| ED045G: Chloride by Discrete Analyser | | | | | | | |
| Clear Plastic Bottle - Natural (ED045G)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 27-Mar-2019 | ✓ |
| ED093F: Dissolved Major Cations | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 27-Mar-2019 | ✓ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 26-Aug-2019 | ✓ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 27-Mar-2019 | ✓ |
| EG050T: Total Hexavalent Chromium | | | | | | | |
| Opaque plastic bottle - NaOH (EG050T)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 28-Feb-2019 | 27-Mar-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 28-Feb-2019 | 27-Mar-2019 | ✓ |
| EK055G: Ammonia as N by Discrete Analyser | | | | | | | |
| Clear Plastic Bottle - Sulfuric Acid (EK055G)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 27-Mar-2019 | ✓ |
| EK057G: Nitrite as N by Discrete Analyser | | | | | | | |
| Clear Plastic Bottle - Natural (EK057G)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 28-Feb-2019 | 01-Mar-2019 | ✓ |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser | | | | | | | |
| Clear Plastic Bottle - Sulfuric Acid (EK059G)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 27-Mar-2019 | ✓ |
| EK061G: Total Kjeldahl Nitrogen By Discrete Analyser | | | | | | | |
| Clear Plastic Bottle - Sulfuric Acid (EK061G)
GW03_27/2/19 | 27-Feb-2019 | 01-Mar-2019 | 27-Mar-2019 | ✓ | 01-Mar-2019 | 27-Mar-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | | | | |
| Clear Plastic Bottle - Sulfuric Acid (EK067G)
GW03_27/2/19 | 27-Feb-2019 | 01-Mar-2019 | 27-Mar-2019 | ✓ | 01-Mar-2019 | 27-Mar-2019 | ✓ |
| EK071G: Reactive Phosphorus as P by discrete analyser | | | | | | | |
| Clear Plastic Bottle - Natural (EK071G)
GW03_27/2/19 | 27-Feb-2019 | ---- | ---- | ---- | 28-Feb-2019 | 01-Mar-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
GW03_27/2/19 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP074B: Oxygenated Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
GW03_27/2/19 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP074C: Sulfonated Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
GW03_27/2/19 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP074D: Fumigants | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
GW03_27/2/19 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
GW03_27/2/19 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
GW03_27/2/19 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
GW03_27/2/19 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
GW03_27/2/19 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
GW03_27/2/19 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP075C: Phthalate Esters | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
GW03_27/2/19 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP075D: Nitrosamines | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
GW03_27/2/19 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |



Matrix: **WATER**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP075E: Nitroaromatics and Ketones | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
GW03_27/2/19 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP075F: Haloethers | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
GW03_27/2/19 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP075G: Chlorinated Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
GW03_27/2/19 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP075H: Anilines and Benzidines | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
GW03_27/2/19 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
GW03_27/2/19 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP075J: Organophosphorus Pesticides | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075)
GW03_27/2/19 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
GW03_27/2/19 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
GW03_27/2/19 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
GW03_27/2/19 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
GW03_27/2/19 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP080: BTEXN | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
GW03_27/2/19 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Alkalinity by PC Titrator | ED037-P | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Ammonia as N by Discrete analyser | EK055G | 1 | 6 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 1 | 8 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Conductivity by PC Titrator | EA010-P | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 8 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 7 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 2 | 50.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | EG050T | 1 | 1 | 100.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Major Cations - Dissolved | ED093F | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 2 | 16 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH by PC Titrator | EA005-P | 1 | 9 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 2 | 16 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 0 | 3 | 0.00 | 10.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 1 | 3 | 33.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 18 | 0.00 | 10.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 13 | 15.38 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 9 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Alkalinity by PC Titrator | ED037-P | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Ammonia as N by Discrete analyser | EK055G | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 2 | 8 | 25.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Conductivity by PC Titrator | EA010-P | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | EG050T | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Major Cations - Dissolved | ED093F | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 1 | 16 | 6.25 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 1 | 16 | 6.25 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 2 | 3 | 66.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Control Samples (LCS) - Continued | | | | | | | |
| Total Phosphorus as P By Discrete Analyser | EK067G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Ammonia as N by Discrete analyser | EK055G | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Conductivity by PC Titrator | EA010-P | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | EG050T | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Major Cations - Dissolved | ED093F | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 1 | 16 | 6.25 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 1 | 16 | 6.25 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Ammonia as N by Discrete analyser | EK055G | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Chloride by Discrete Analyser | ED045G | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Mercury by FIMS | EG035F | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 0 | 2 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Total | EG050T | 0 | 1 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser | EK057G | 1 | 16 | 6.25 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | 1 | 16 | 6.25 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds | EP075 | 0 | 3 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser | ED041G | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Phosphorus as P By Discrete Analyser | EK067G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 18 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|--|----------|--------|---|
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Conductivity by PC Titrator | EA010-P | WATER | In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Calculated TDS (from Electrical Conductivity) | EA016 | WATER | In house: Calculation from Electrical Conductivity (APHA 2510 B) using a conversion factor specified in the analytical report. This method is compliant with NEPM (2013) Schedule B(3) |
| Alkalinity by PC Titrator | ED037-P | WATER | In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3) |
| Sulfate (Turbidimetric) as SO ₄ 2- by Discrete Analyser | ED041G | WATER | In house: Referenced to APHA 4500-SO ₄ . Dissolved sulfate is determined in a 0.45µm filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO ₄ suspension is measured by a photometer and the SO ₄ -2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Chloride by Discrete Analyser | ED045G | WATER | In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003 |
| Major Cations - Dissolved | ED093F | WATER | In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)

Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)

Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|--|------------|--------|--|
| Hexavalent Chromium - Total | EG050T | WATER | In house: Referenced to APHA 3500 Cr-B. Hexavalent chromium is determined directly on water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Ammonia as N by Discrete analyser | EK055G | WATER | In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Nitrite as N by Discrete Analyser | EK057G | WATER | In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Nitrate as N by Discrete Analyser | EK058G | WATER | In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3) |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | WATER | In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Kjeldahl Nitrogen as N By Discrete Analyser | EK061G | WATER | In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Nitrogen as N (TKN + Nox) By Discrete Analyser | EK062G | WATER | In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Phosphorus as P By Discrete Analyser | EK067G | WATER | In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Reactive Phosphorus as P-By Discrete Analyser | EK071G | WATER | In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3) |
| Ionic Balance by PCT DA and Turbi SO4 DA | EN055 - PG | WATER | In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds | EP075 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |



| <i>Analytical Methods</i> | <i>Method</i> | <i>Matrix</i> | <i>Method Descriptions</i> |
|---|---------------|---------------|--|
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| <i>Preparation Methods</i> | <i>Method</i> | <i>Matrix</i> | <i>Method Descriptions</i> |
| TKN/TP Digestion | EK061/EK067 | WATER | In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3) |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1902873**

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 3 |
| Order number | : 60592634 Task 1 | Quote number | : EP2016AECOMAU0014 (EN/096/18) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : GIJPP EES | | |
| Sampler | : [REDACTED] | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 27-Feb-2019 16:25 | Issue Date | : 28-Feb-2019 |
| Client Requested Due Date | : 05-Mar-2019 | Scheduled Reporting Date | : 05-Mar-2019 |

Delivery Details

| | | | |
|----------------------|-------------------|------------------------------------|-----------------------|
| Mode of Delivery | : Client Drop Off | Security Seal | : Intact. |
| No. of coolers/boxes | : 1 | Temperature | : 8.4°C - Ice present |
| Receipt Detail | : | No. of samples received / analysed | : 10 / 7 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale & ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM1902873-001 : [27-Feb-2019] : CPT000_BH107_270219_0.3
EM1902873-002 : [27-Feb-2019] : CPT000_BH107_270219_0.5
EM1902873-005 : [27-Feb-2019] : CPT000_BH107_270219_2.0
EM1902873-006 : [27-Feb-2019] : CPT000_BH107_270219_2.5

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 |
|----------------------|-----------------------------|-------------------------|---|--|--------------------------------------|-------------------------|
| EM1902873-001 | 27-Feb-2019 00:00 | CPT000_BH107_270219_... | | | ✓ | ✓ |
| EM1902873-002 | 27-Feb-2019 00:00 | CPT000_BH107_270219_... | | ✓ | | |
| EM1902873-003 | 27-Feb-2019 00:00 | CPT000_BH107_270219_... | ✓ | | | |
| EM1902873-004 | 27-Feb-2019 00:00 | CPT000_BH107_270219_... | ✓ | | | |
| EM1902873-005 | 27-Feb-2019 00:00 | CPT000_BH107_270219_... | | | ✓ | ✓ |
| EM1902873-006 | 27-Feb-2019 00:00 | CPT000_BH107_270219_... | | ✓ | | |
| EM1902873-007 | 27-Feb-2019 00:00 | QC156_270219 | | | ✓ | ✓ |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) WATER
No analysis requested | WATER - 448.3 Water
VIC EPA IWRG621 - Water Equivalent Suite | WATER - EP068A (OC)
OC Pesticides |
|----------------------|-----------------------------|------------------|--|---|--------------------------------------|
| EM1902873-008 | 27-Feb-2019 00:00 | QC357_270219 | | ✓ | ✓ |
| EM1902873-009 | 27-Feb-2019 00:00 | QC457_270219 | ✓ | | |



Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | |
|----------------------|-----------------------------|------------------|---|
| EM1902873-010 | 27-Feb-2019 00:00 | QC565_270219 | ✓ |

WATER - W-18
TRH(C6 - C9)/BTEXN

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method
Client Sample ID(s) | Container | Due for
extraction | Due for
analysis | Samples Received | | Instructions Received | |
|-------------------------------|--------------------------------|-----------------------|---------------------|------------------|------------|-----------------------|------------|
| | | | | Date | Evaluation | Date | Evaluation |
| EA005-P: pH by PC Titrator | | | | | | | |
| QC357_270219 | Clear Plastic Bottle - Natural | ---- | 27-Feb-2019 | 27-Feb-2019 | ✔ | 28-Feb-2019 | ✖ |

Requested Deliverables

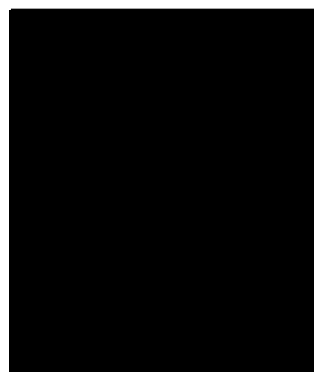
ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

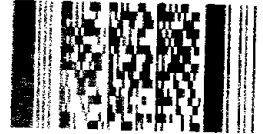
- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

Email
Email
Email
Email
Email
Email
Email
Email
Email
Email



Forwarded to
Secondary Lab *MG T*
Initials *TC* Date *28, 2*

Environmental Division
Melbourne
Work Order Reference
EM1902873



Exemption - 61-3-8549 9600

March 29th 1625

[illegible]

An email will be sent
regarding further analysis
AFCom

60592634

27/02/19

② all com com

60592634

AECOM

Q4AN(EV)-007-FM1

ANZ
FQM - Generic Chain of Custody Form

[illegible]

CERTIFICATE OF ANALYSIS

Work Order : **EM1902873**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number : 60592634 Task 1
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP EES
Quote number : EN/096/18
No. of samples received : 10
No. of samples analysed : 8

Page : 1 of 15
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 27-Feb-2019 16:25
Date Analysis Commenced : 28-Feb-2019
Issue Date : 06-Mar-2019 17:19



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| Signatories | Position | Accreditation Category |
|--|-------------------------------------|---|
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | 2IC Organic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | 2IC Organic Chemist | Melbourne Organics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- pH analysis is done under non-stirring condition.
- EG020F:EM1902873#8 results for dissolved Zinc have been confirmed by re-preparation and re-analysis.
- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): ANC not required because pH KCl less than 6.5
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH107_2702
19_0.3 | CPT000_BH107_2702
19_0.5 | CPT000_BH107_2702
19_2.0 | CPT000_BH107_2702
19_2.5 | QC156_270219 |
|---|------------|-------|-------------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------|
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1902873-001 | EM1902873-002 | EM1902873-005 | EM1902873-006 | EM1902873-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 6.3 | ---- | 6.5 | ---- | 6.5 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 5.2 | ---- | 6.0 | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | 20 | ---- | 5 | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | 0.03 | ---- | <0.02 | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | 0.010 | ---- | <0.005 | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | <10 | ---- | <10 | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | ---- | 1.5 | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | 0.04 | ---- | <0.02 | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | 27 | ---- | <10 | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | 2 | ---- | <1 | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | 0.04 | ---- | <0.02 | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | 27 | ---- | <10 | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | 2 | ---- | <1 | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 7.8 | ---- | 24.2 | ---- | 25.2 |
| EG005T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | 17 | ---- | <5 | ---- | <5 |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | | 10 | ---- | <5 | ---- | <5 |
| Lead | 7439-92-1 | 5 | mg/kg | | 50 | ---- | 15 | ---- | 10 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | <2 | ---- | <2 | ---- | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | | 3 | ---- | 6 | ---- | 6 |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | ---- | <2 | ---- | <2 |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | | 5 | ---- | <5 | ---- | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | ---- | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | ---- | 0.6 | ---- | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH107_2702
19_0.3 | CPT000_BH107_2702
19_0.5 | CPT000_BH107_2702
19_2.0 | CPT000_BH107_2702
19_2.5 | QC156_270219 |
|---|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------|
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1902873-001 | EM1902873-002 | EM1902873-005 | EM1902873-006 | EM1902873-007 |
| | | | | | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 60 | ---- | 220 | ---- | 250 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | ---- | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | ---- | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | ---- | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | <0.4 | ---- | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | ---- | <0.04 | ---- | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH107_2702
19_0.3 | CPT000_BH107_2702
19_0.5 | CPT000_BH107_2702
19_2.0 | CPT000_BH107_2702
19_2.5 | QC156_270219 |
|---|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------|
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1902873-001 | EM1902873-002 | EM1902873-005 | EM1902873-006 | EM1902873-007 |
| | | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | ---- | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | ---- | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | ---- | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | ---- | <5 | ---- | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | ---- | <1 | ---- | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH107_2702
19_0.3 | CPT000_BH107_2702
19_0.5 | CPT000_BH107_2702
19_2.0 | CPT000_BH107_2702
19_2.5 | QC156_270219 |
|--|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------|
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1902873-001 | EM1902873-002 | EM1902873-005 | EM1902873-006 | EM1902873-007 |
| | | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 0.6 | ---- | 0.6 | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.2 | ---- | 1.2 | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4.4'-DDE | 72-55-9 | 0.05 | mg/kg | | 0.28 | ---- | <0.05 | ---- | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | ---- | <0.03 |
| 4.4'-DDD | 72-54-8 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | ---- | <0.05 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT000_BH107_2702
19_0.3 | CPT000_BH107_2702
19_0.5 | CPT000_BH107_2702
19_2.0 | CPT000_BH107_2702
19_2.5 | QC156_270219 |
|--|--------------------------|-------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------|
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1902873-001 | EM1902873-002 | EM1902873-005 | EM1902873-006 | EM1902873-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 | |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | ---- | <0.05 | |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 | |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | 0.28 | ---- | <0.03 | ---- | <0.03 | |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 | |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | 0.28 | ---- | <0.05 | ---- | <0.05 | |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 | |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | ---- | <0.03 | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | <10 | ---- | <10 | |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 | |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | <10 | ---- | <10 | |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | ---- | <100 | |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | ---- | <100 | |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 | |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | ---- | <100 | |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | ---- | <100 | |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 | |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | ---- | <50 | ---- | <50 | |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | <10 | ---- | <10 | |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 101 | ---- | 92.4 | ---- | 90.6 | |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 90.8 | ---- | 79.1 | ---- | 72.5 | |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 88.3 | ---- | 77.8 | ---- | 70.5 | |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 104 | ---- | 88.0 | ---- | 79.8 | |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 106 | ---- | 111 | ---- | 116 | |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 98.9 | ---- | 90.0 | ---- | 94.4 | |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT000_BH107_2702
19_0.3 | CPT000_BH107_2702
19_0.5 | CPT000_BH107_2702
19_2.0 | CPT000_BH107_2702
19_2.5 | QC156_270219 |
|---|------------|-------|------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------|
| Client sampling date / time | | | | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1902873-001 | EM1902873-002 | EM1902873-005 | EM1902873-006 | EM1902873-007 |
| | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 95.2 | ---- | 76.1 | ---- | 76.2 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 103 | ---- | 91.7 | ---- | 86.8 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 114 | ---- | 102 | ---- | 93.5 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 107 | ---- | 95.8 | ---- | 93.7 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 112 | ---- | 105 | ---- | 110 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 108 | ---- | 86.5 | ---- | 90.9 |



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|---|------------|--------|---------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC357_270219 | QC457_270219 | QC565_270219 | ---- | ---- |
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1902873-008 | EM1902873-009 | EM1902873-010 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EA005P: pH by PC Titrator | | | | | | | | | |
| pH Value | ---- | 0.01 | pH Unit | | 5.55 | ---- | ---- | ---- | ---- |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | | | |
| Silver | 7440-22-4 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Selenium | 7782-49-2 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| Tin | 7440-31-5 | 0.001 | mg/L | | <0.001 | ---- | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | | 0.058 | ---- | ---- | ---- | ---- |
| EG035F: Dissolved Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | | <0.0001 | ---- | ---- | ---- | ---- |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | | <0.01 | ---- | ---- | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 0.004 | mg/L | | <0.004 | ---- | ---- | ---- | ---- |
| EK040P: Fluoride by PC Titrator | | | | | | | | | |
| Fluoride | 16984-48-8 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | | <1 | ---- | ---- | ---- | ---- |
| EP068A: Organochlorine Pesticides (OC) | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |



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|--|----------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC357_270219 | QC457_270219 | QC565_270219 | ---- | ---- |
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1902873-008 | EM1902873-009 | EM1902873-010 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EP068A: Organochlorine Pesticides (OC) - Continued | | | | | | | | | |
| 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | | ---- | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.5 | µg/L | <0.5 | | ---- | ---- | ---- | ---- |
| 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | | ---- | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.5 | µg/L | <0.5 | | ---- | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.5 | µg/L | <0.5 | | ---- | ---- | ---- | ---- |
| 4,4'-DDT | 50-29-3 | 2.0 | µg/L | <2.0 | | ---- | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 2.0 | µg/L | <2.0 | | ---- | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.5 | µg/L | <0.5 | | ---- | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.5 | µg/L | <0.5 | | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |

EP080/071: Total Petroleum Hydrocarbons



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|--|-------------------|-----|------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC357_270219 | QC457_270219 | QC565_270219 | ---- | ---- |
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1902873-008 | EM1902873-009 | EM1902873-010 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons - Continued | | | | | | | | | |
| C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | <20 | | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | <50 | ---- | ---- | | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | <50 | ---- | ---- | | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | <50 | ---- | ---- | | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | <20 | | ---- | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | <20 | <20 | <20 | | ---- | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | ---- | ---- | | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | <100 | ---- | ---- | | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 100 | µg/L | <100 | ---- | ---- | | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | <1 | | ---- | ---- |
| Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | <2 | | ---- | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | <2 | | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | <2 | <2 | <2 | | ---- | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | <2 | | ---- | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | <2 | <2 | <2 | | ---- | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | <1 | <1 | <1 | | ---- | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | <5 | | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | 80.4 | ---- | ---- | | ---- | ---- |
| EP068S: Organochlorine Pesticide Surrogate | | | | | | | | | |
| Dibromo-DDE | 21655-73-2 | 0.5 | % | 90.2 | ---- | ---- | | ---- | ---- |
| EP068T: Organophosphorus Pesticide Surrogate | | | | | | | | | |
| DEF | 78-48-8 | 0.5 | % | 87.2 | ---- | ---- | | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | 108 | ---- | ---- | | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | 126 | ---- | ---- | | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | 124 | ---- | ---- | | ---- | ---- |



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|---|------------|-----|------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC357_270219 | QC457_270219 | QC565_270219 | ---- | ---- |
| Client sampling date / time | | | | | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | 27-Feb-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1902873-008 | EM1902873-009 | EM1902873-010 | ----- | ----- |
| | | | | Result | Result | Result | | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 29.4 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 79.5 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 86.2 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 90.2 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 96.8 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 90.9 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 108 | 97.6 | 95.9 | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 113 | 88.5 | 86.1 | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 126 | 99.0 | 99.2 | ---- | ---- |



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| Sub-Matrix: SOIL | | □□□□ □ □□□ □ s □ | |
|---|------------|------------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |

| Sub-Matrix: WATER | | □□□□ □ □□□ □ s □ | |
|---|------------|------------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP068S: Organochlorine Pesticide Surrogate | | | |
| Dibromo-DDE | 21655-73-2 | 49 | 117 |
| EP068T: Organophosphorus Pesticide Surrogate | | | |
| DEF | 78-48-8 | 51 | 127 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |



Sub-Matrix: **WATER**

| | | □□□□ □□□ □ s □ | |
|--|------------|----------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP080S: TPH(V)/BTEX Surrogates - Continued | | | |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1902873 | Page | : 1 of 8 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 27-Feb-2019 16:25 |
| Order number | : 60592634 Task 1 | Date Analysed | : 28-Feb-2019 |
| C-O-C number | : ---- | Date Issued | : 06-Mar-2019 17:19 |
| No. of samples received | : 10 | | |
| No. of samples analysed | : 8 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides comparison of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702 and measurement uncertainty.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

This guideline comparison report only includes data for chemical parameters specifically listed within the IWRG621 (2009) guideline are analysed by ALS using the **P-16 package in full**.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Any shading applied does not take into account measurement uncertainty. Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract Terms and Conditions for details.

For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required IDs are listed and analysed.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

Results for all samples detailed in this report are below the upper threshold limits for Fill Material.



Analytical Results

Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT000_BH10
7_270219_0.3 | | CPT000_BH10
7_270219_2.0 | | QC156_27021
9 | | ---- | | ---- | |
|--|--------------|------|---------|--------------------|------------------|-----------------------------|--|-----------------------------|--|----------------------|--|----------|--|----------|--|
| | | | | Sampling date/time | | 27-Feb-2019
15:00 | | 27-Feb-2019
15:00 | | 27-Feb-2019
15:00 | | ---- | | ---- | |
| | | | | | | EM1902873-001 MU | | EM1902873-005 MU | | EM1902873-007 MU | | ----- MU | | ----- MU | |
| Compound | Method | LOR | Unit | □□□□ □□
□□□ □ | □□□□ □□
□□□ □ | | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 6.3 ± 0.1 | | 6.5 ± 0.1 | | 6.5 | | ---- | | ---- | |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 17 ± 3 | | <5 -- | | <5 | | ---- | | ---- | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 -- | | <1 -- | | <1 | | ---- | | ---- | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 10 ± 1 | | <5 -- | | <5 | | ---- | | ---- | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 50 ± 5 | | 15 ± 2 | | 10 | | ---- | | ---- | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 -- | | <2 -- | | <2 | | ---- | | ---- | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 3 ± 0.4 | | 6 ± 0.6 | | 6 | | ---- | | ---- | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 -- | | <5 -- | | <5 | | ---- | | ---- | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 -- | | <2 -- | | <2 | | ---- | | ---- | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 5 ± 2 | | <5 -- | | <5 | | ---- | | ---- | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 -- | | <0.1 -- | | <0.1 | | ---- | | ---- | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 | | 0.6 | | <0.5 | | ---- | | ---- | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | | <1 | | <1 | | ---- | | ---- | |
| EK040T: Fluoride Total | | | | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 60 ± 30 | | 220 ± 40 | | 250 | | ---- | | ---- | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 -- | | <0.2 -- | | <0.2 | | ---- | | ---- | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 -- | | <0.2 -- | | <0.2 | | ---- | | ---- | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 -- | | <0.02 -- | | <0.02 | | ---- | | ---- | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 -- | | <0.02 -- | | <0.02 | | ---- | | ---- | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 -- | | <0.01 -- | | <0.01 | | ---- | | ---- | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 -- | | <0.03 -- | | <0.03 | | ---- | | ---- | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 -- | | <1 -- | | <1 | | ---- | | ---- | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 -- | | <0.5 -- | | <0.5 | | ---- | | ---- | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | CPT000_BH10
7_270219_0.3 | CPT000_BH10
7_270219_2.0 | QC156_27021
9 | ---- | ---- |
|--|--------------|------|-------|--------------------|--------------------|-----------------------------|-----------------------------|----------------------|----------|----------|
| Sampling date/time | | | | □ □ □ □ □ □ | □ □ □ □ □ □ | 27-Feb-2019
15:00 | 27-Feb-2019
15:00 | 27-Feb-2019
15:00 | ---- | ---- |
| Compound | Method | LOR | Unit | □ □ □ □
□ □ □ □ | □ □ □ □
□ □ □ □ | EM1902873-001 MU | EM1902873-005 MU | EM1902873-007 MU | ----- MU | ----- MU |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | <0.5 .. | <0.5 .. | <0.5 | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | <0.03 .. | <0.03 .. | <0.03 | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | <0.03 .. | <0.03 .. | <0.03 | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | 0.28 ± 0.08 | <0.05 .. | <0.05 | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | <0.03 .. | <0.03 .. | <0.03 | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | <0.03 .. | <0.03 .. | <0.03 | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | <10 .. | <10 .. | <10 | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | <50 .. | <50 .. | <50 | ---- | ---- |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | CPT000_BH10
7_270219_0.3 | CPT000_BH10
7_270219_2.0 | QC156_27021
9 | ---- | ---- |
|---|--------------|------|---------|------------------|--------------|-----------------------------|-----------------------------|----------------------|----------|----------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 27-Feb-2019
15:00 | 27-Feb-2019
15:00 | 27-Feb-2019
15:00 | ---- | ---- |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1902873-001 MU | EM1902873-005 MU | EM1902873-007 MU | ----- MU | ----- MU |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 6.3 ± 0.1 | 6.5 ± 0.1 | 6.5 | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | 17 ± 3 | <5 -- | <5 | ---- | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 -- | <1 -- | <1 | ---- | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 10 ± 1 | <5 -- | <5 | ---- | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 50 ± 5 | 15 ± 2 | 10 | ---- | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 -- | <2 -- | <2 | ---- | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 3 ± 0.4 | 6 ± 0.6 | 6 | ---- | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 -- | <5 -- | <5 | ---- | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 -- | <2 -- | <2 | ---- | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 -- | <5 -- | <5 | ---- | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 5 ± 2 | <5 -- | <5 | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 -- | <0.1 -- | <0.1 | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 | 0.6 | <0.5 | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | <1 | <1 | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 60 ± 30 | 220 ± 40 | 250 | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 -- | <0.2 -- | <0.2 | ---- | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 -- | <0.2 -- | <0.2 | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 -- | <0.02 -- | <0.02 | ---- | ---- |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 -- | <0.02 -- | <0.02 | ---- | ---- |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 -- | <0.01 -- | <0.01 | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 -- | <0.03 -- | <0.03 | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 -- | <1 -- | <1 | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 -- | <0.5 -- | <0.5 | ---- | ---- |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | CPT000_BH10
7_270219_0.3 | CPT000_BH10
7_270219_2.0 | QC156_27021
9 | ---- | ---- |
|--|--------------|------|-------|------------------|--------------|-----------------------------|-----------------------------|----------------------|----------|----------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 27-Feb-2019
15:00 | 27-Feb-2019
15:00 | 27-Feb-2019
15:00 | ---- | ---- |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1902873-001 MU | EM1902873-005 MU | EM1902873-007 MU | ----- MU | ----- MU |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 .. | <0.5 .. | <0.5 | ---- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 .. | <0.03 .. | <0.03 | ---- | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 .. | <0.03 .. | <0.03 | ---- | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | 0.28 ± 0.08 | <0.05 .. | <0.05 | ---- | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 .. | <0.03 .. | <0.03 | ---- | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 .. | <0.03 .. | <0.03 | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 .. | <10 .. | <10 | ---- | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | <50 .. | <50 .. | <50 | ---- | ---- |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | Client sample ID | | CPT000_BH10
7_270219_0.3 | CPT000_BH10
7_270219_2.0 | QC156_27021
9 | ---- | ---- |
|---|--------------|------|---------|------------------|--------------|-----------------------------|-----------------------------|----------------------|----------|----------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 27-Feb-2019
15:00 | 27-Feb-2019
15:00 | 27-Feb-2019
15:00 | ---- | ---- |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM1902873-001 MU | EM1902873-005 MU | EM1902873-007 MU | ----- MU | ----- MU |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 6.3 ± 0.1 | 6.5 ± 0.1 | 6.5 | ---- | ---- |
| EG005T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | 17 ± 3 | <5 -- | <5 | ---- | ---- |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 -- | <1 -- | <1 | ---- | ---- |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 10 ± 1 | <5 -- | <5 | ---- | ---- |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 50 ± 5 | 15 ± 2 | 10 | ---- | ---- |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 -- | <2 -- | <2 | ---- | ---- |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 3 ± 0.4 | 6 ± 0.6 | 6 | ---- | ---- |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 -- | <5 -- | <5 | ---- | ---- |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 -- | <2 -- | <2 | ---- | ---- |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 -- | <5 -- | <5 | ---- | ---- |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 5 ± 2 | <5 -- | <5 | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 -- | <0.1 -- | <0.1 | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 | 0.6 | <0.5 | ---- | ---- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | <1 | <1 | ---- | ---- |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 60 ± 30 | 220 ± 40 | 250 | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 -- | <0.1 -- | <0.1 | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 -- | <0.2 -- | <0.2 | ---- | ---- |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 -- | <0.2 -- | <0.2 | ---- | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 -- | <0.01 -- | <0.01 | ---- | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 -- | <0.03 -- | <0.03 | ---- | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 -- | <1 -- | <1 | ---- | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 -- | <0.5 -- | <0.5 | ---- | ---- |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | | | | | | | | |
|---|--------------|------|-------|------------------|------|------|-----------------------------|-----------------------------|----------------------|----------|----------|
| Sub-Matrix: SOIL | | | | Client sample ID | | | CPT000_BH10
7_270219_0.3 | CPT000_BH10
7_270219_2.0 | QC156_27021
9 | ---- | ---- |
| Sampling date/time | | | | | | | 27-Feb-2019
15:00 | 27-Feb-2019
15:00 | 27-Feb-2019
15:00 | ---- | ---- |
| Compound | Method | LOR | Unit | | | | EM1902873-001 MU | EM1902873-005 MU | EM1902873-007 MU | ----- MU | ----- MU |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 | .. | <0.5 | .. | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | 0.28 | ± 0.13 | <0.03 | .. | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | .. | <10 | .. | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 | .. | <50 | .. | <50 | ---- |

Note: Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Any shading applied does not take into account measurement uncertainty.



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1902873 | Page | : 1 of 19 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 27-Feb-2019 |
| Order number | : 60592634 Task 1 | Date Analysis Commenced | : 28-Feb-2019 |
| C-O-C number | : ---- | Issue Date | : 06-Mar-2019 |
| Sampler | : [REDACTED] | | |
| Site | : GIJPP EES | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 10 | | |
| No. of samples analysed | : 8 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

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Senior Acid Sulfate Soil Chemist
Senior Inorganic Chemist
2IC Organic Chemist
2IC Organic Chemist
Senior Inorganic Instrument Chemist
Senior Organic Chemist

□□□ □□□ □□ □□ □□

Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|-------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2213074) | | | | | | | | | |
| EM1902665-007 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 6.2 | 5.9 | 4.96 | 0% - 20% |
| EM1902819-016 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 6.6 | 6.7 | 1.50 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2215432) | | | | | | | | | |
| EM1902873-002 | CPT000_BH107_270219_0.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | 0.03 | 0.03 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 20 | 20 | 0.00 | 0% - 50% |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 5.2 | 5.2 | 0.00 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2215432) | | | | | | | | | |
| EM1902873-002 | CPT000_BH107_270219_0.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.010 | 0.009 | 12.2 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2212543) | | | | | | | | | |
| EM1902819-016 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 9.2 | 9.9 | 7.47 | No Limit |
| EM1902866-002 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 11.2 | 11.7 | 4.12 | 0% - 50% |
| EG005T: Total Metals by ICP-AES (QC Lot: 2212133) | | | | | | | | | |
| EM1902784-006 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 229 | 208 | 9.25 | 0% - 20% |
| EM1902784-006 | Anonymous | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 62 | 56 | 10.2 | 0% - 20% |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 68 | 67 | 2.15 | 0% - 50% |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 101 | 87 | 14.2 | 0% - 20% |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|-------------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005T: Total Metals by ICP-AES (QC Lot: 2212133) - continued | | | | | | | | | |
| EM1902784-006 | Anonymous | EG005T: Tin | 7440-31-5 | 5 | mg/kg | 13 | 12 | 11.2 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 137 | 127 | 7.44 | 0% - 20% |
| EM1902886-005 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | 5 | <2 | 79.4 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 20 | 22 | 7.93 | 0% - 50% |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 12 | 11 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 22 | 23 | 5.61 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 11 | 11 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 26 | 29 | 11.9 | No Limit |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2212134) | | | | | | | | | |
| EM1902784-006 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | 0.1 | 0.2 | 0.00 | No Limit |
| EM1902886-005 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2212112) | | | | | | | | | |
| EM1902824-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1902886-005 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2212938) | | | | | | | | | |
| EM1902865-001 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | 4 | 4 | 0.00 | No Limit |
| EM1902886-006 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2213079) | | | | | | | | | |
| EM1902819-017 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 140 | 100 | 32.5 | No Limit |
| EM1902886-004 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 240 | 260 | 8.32 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2210731) | | | | | | | | | |
| EM1902784-004 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2211670) | | | | | | | | | |
| EM1902873-001 | CPT000_BH107_270219_0.3 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1902886-008 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|-------------------------|---------------------------------------|------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2211670) - continued | | | | | | | | | |
| EM1902886-008 | Anonymous | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2211670) | | | | | | | | | |
| EM1902873-001 | CPT000_BH107_270219_0.3 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1902886-008 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2211670) | | | | | | | | | |
| EM1902873-001 | CPT000_BH107_270219_0.3 | EP074-UT: 1.1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1.2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.1.1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| | | EM1902886-008 | Anonymous | EP074-UT: 1.1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 |
| EP074-UT: cis-1.2-Dichloroethene | 156-59-2 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: 1.1.1-Trichloroethane | 71-55-6 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: 1.1.1.2-Tetrachloroethane | 630-20-6 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: 1.2.4-Trichlorobenzene | 120-82-1 | | | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EP074-UT: Vinyl chloride | 75-01-4 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: trans-1.2-Dichloroethene | 156-60-5 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: Chloroform | 67-66-3 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: 1.2-Dichloroethane | 107-06-2 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| EP074-UT: Trichloroethene | 79-01-6 | | | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|-----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2211670) - continued | | | | | | | | | |
| EM1902886-008 | Anonymous | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2.2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1.1.2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2210733) | | | | | | | | | |
| EM1902784-004 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-9
0-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2210733) | | | | | | | | | |
| EM1902784-004 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2210733) | | | | | | | | | |
| EM1902784-004 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|-------------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2210733) - continued | | | | | | | | | |
| EM1902784-004 | Anonymous | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2210733) | | | | | | | | | |
| EM1902784-004 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2210732) | | | | | | | | | |
| EM1902784-004 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2211670) | | | | | | | | | |
| EM1902873-001 | CPT000_BH107_270219_0_3 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1902886-008 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2210732) | | | | | | | | | |
| EM1902784-004 | Anonymous | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|-------------------------|---|-------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2211670) | | | | | | | | | |
| EM1902873-001 | CPT000_BH107_270219_0.3 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1902886-008 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA005P: pH by PC Titrator (QC Lot: 2212038) | | | | | | | | | |
| EM1902841-006 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 7.05 | 7.05 | 0.00 | 0% - 20% |
| EM1902841-002 | Anonymous | EA005-P: pH Value | ---- | 0.01 | pH Unit | 6.43 | 6.49 | 0.929 | 0% - 20% |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2214373) | | | | | | | | | |
| EM1902670-001 | Anonymous | EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | 0.003 | 0.002 | 0.00 | No Limit |
| EG020F: Dissolved Metals by ICP-MS (QC Lot: 2214374) | | | | | | | | | |
| EM1902873-008 | QC357_270219 | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | 0.058 | 0.058 | 0.00 | 0% - 50% |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1902888-008 | Anonymous | EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | 0.00 | No Limit |
| | | EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EG035F: Dissolved Mercury by FIMS (QC Lot: 2214371) | | | | | | | | | |
| EM1902886-014 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EM1902670-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EG050F: Dissolved Hexavalent Chromium (QC Lot: 2210343) | | | | | | | | | |
| EM1902784-001 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM1902816-010 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2212282) | | | | | | | | | |
| EM1902816-004 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|----------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2212282) - continued | | | | | | | | | |
| EM1902918-052 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | <0.004 | 0.00 | No Limit |
| EK040P: Fluoride by PC Titrator (QC Lot: 2212033) | | | | | | | | | |
| EM1902665-008 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | 0.1 | 0.1 | 0.00 | No Limit |
| EM1902816-009 | Anonymous | EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2211540) | | | | | | | | | |
| EM1902873-008 | QC357_270219 | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2211540) | | | | | | | | | |
| EM1902873-008 | QC357_270219 | EP074: 1.1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2211540) | | | | | | | | | |
| EM1902873-008 | QC357_270219 | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2211540) | | | | | | | | | |
| EM1902873-008 | QC357_270219 | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2211539) | | | | | | | | | |
| EM1902757-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | 1380 | 1380 | 0.00 | No Limit |
| EM1902873-008 | QC357_270219 | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2211539) | | | | | | | | | |
| EM1902757-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | 1340 | 1340 | 0.00 | No Limit |
| EM1902873-008 | QC357_270219 | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2211539) | | | | | | | | | |
| EM1902757-001 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | 635 | 614 | 3.35 | 0% - 20% |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | 2 | 2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | 52 | 51 | 2.20 | 0% - 20% |

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 Work Order : EM1902873
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080: BTEXN (QC Lot: 2211539) - continued | | | | | | | | | |
| EM1902757-001 | Anonymous | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | 19 | 18 | 0.00 | No Limit |
| EM1902873-008 | QC357_270219 | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|-------|-------------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | LCS | Low |
| EA033-A: Actual Acidity (QCLot: 2215432) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 91.0 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2215432) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 98.2 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EG005T: Total Metals by ICP-AES (QCLot: 2212133) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 89.0 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 84.6 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 88.9 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 88.5 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 105 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 87.6 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 101 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 80.3 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 84.7 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 93.5 | 79 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2212134) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 85.6 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2212112) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 89.3 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2212938) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 101 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2213079) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 92.5 | 75 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2210731) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1.27 mg/kg | 111 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2211670) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 87.8 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 89.7 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 88.8 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 85.6 | 66 | 115 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2211670) - continued | | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 89.0 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 87.1 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2211670) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 97.7 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2211670) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 73.6 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 77.9 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 86.2 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 79.8 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 84.6 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 84.7 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 80.9 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 79.7 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 86.0 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 81.5 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 90.8 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 83.0 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 89.3 | 71 | 118 |
| EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 89.3 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 64.8 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 86.0 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 80.1 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 81.6 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 76.3 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2210733) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 114 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 101 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 113 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 114 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 107 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 110 | 60 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 79.2 | 65 | 124 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 106 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 80.6 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2210733) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 110 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 112 | 65 | 126 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2210733) - continued | | | | | | | | |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 112 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 85.0 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 108 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 85.3 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 67.9 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 91.7 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 94.6 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 96.3 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2210733) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 96.4 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 114 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 118 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 103 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 1 mg/kg | 107 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 98.6 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 102 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 91.0 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 102 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 124 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 108 | 72 | 134 |
| EP075-EM: Dibenzo(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 110 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 114 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2210733) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 119 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 118 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 120 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 116 | 74 | 128 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 117 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 102 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 112 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 113 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 64 | 137 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 97.0 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 120 | 72 | 132 |

| Sub-Matrix: WATER | | | | Method Blank (MB) Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|--------|------|--------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | LCS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2214373) | | | | | | | | |
| EG020B-F: Silver | 7440-22-4 | 0.001 | mg/L | <0.001 | 0.02 mg/L | 101 | 84 | 116 |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2214374) | | | | | | | | |
| EG020A-F: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 101 | 91 | 107 |
| EG020A-F: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 103 | 84 | 104 |
| EG020A-F: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.5 | 82 | 103 |
| EG020A-F: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 97.6 | 83 | 105 |
| EG020A-F: Molybdenum | 7439-98-7 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 104 | 83 | 109 |
| EG020A-F: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 98.0 | 82 | 106 |
| EG020A-F: Selenium | 7782-49-2 | 0.01 | mg/L | <0.01 | 0.1 mg/L | 100 | 82 | 109 |
| EG020A-F: Tin | 7440-31-5 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 83 | 109 |
| EG020A-F: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 102 | 85 | 109 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2214371) | | | | | | | | |



Sub-Matrix: **WATER**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|--------|------|-----------------------------|---------------------------------------|---------------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | Low | High |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2214371) - continued | | | | | | | | |
| EG035F: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 85.4 | 76 | 114 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2210343) | | | | | | | | |
| EG050F: Hexavalent Chromium | 18540-29-9 | 0.01 | mg/L | <0.01 | 0.5 mg/L | 99.4 | 92 | 111 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2212282) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 0.004 | mg/L | <0.004 | 0.2 mg/L | 89.5 | 75 | 109 |
| EK040P: Fluoride by PC Titrator (QCLot: 2212033) | | | | | | | | |
| EK040P: Fluoride | 16984-48-8 | 0.1 | mg/L | <0.1 | 5 mg/L | 96.8 | 87 | 117 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2210361) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 79.0 | 48 | 124 |
| EP068A: Organochlorine Pesticides (OC) (QCLot: 2210362) | | | | | | | | |
| EP068: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 86.0 | 56 | 118 |
| EP068: Hexachlorobenzene (HCB) | 118-74-1 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 80.3 | 49 | 114 |
| EP068: beta-BHC | 319-85-7 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 88.3 | 60 | 117 |
| EP068: gamma-BHC | 58-89-9 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 107 | 53 | 121 |
| EP068: delta-BHC | 319-86-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 89.8 | 59 | 117 |
| EP068: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 85.6 | 54 | 120 |
| EP068: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 86.7 | 54 | 118 |
| EP068: Heptachlor epoxide | 1024-57-3 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 89.8 | 58 | 121 |
| EP068: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 86.0 | 52 | 124 |
| EP068: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 87.1 | 55 | 121 |
| EP068: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 93.6 | 55 | 122 |
| EP068: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 85.9 | 52 | 122 |
| EP068: Endrin | 72-20-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 92.5 | 56 | 131 |
| EP068: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 86.3 | 55 | 125 |
| EP068: Endrin aldehyde | 7421-93-4 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 95.7 | 58 | 126 |
| EP068: Endosulfan sulfate | 1031-07-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 93.1 | 50 | 126 |
| EP068: 4,4'-DDT | 50-29-3 | 2 | µg/L | <2.0 | 2.5 µg/L | 97.5 | 51 | 132 |
| EP068: Methoxychlor | 72-43-5 | 2 | µg/L | <2.0 | 2.5 µg/L | 104 | 50 | 134 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2211540) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 101 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2211540) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 95.6 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 89.3 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 105 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 91.7 | 68 | 119 |
| EP074: cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 98.3 | 77 | 118 |
| EP074: 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 91.3 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 90.6 | 62 | 117 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2211540) - continued | | | | | | | | |
| EP074: 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 102 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 95.0 | 67 | 120 |
| EP074: 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 104 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 92.0 | 67 | 120 |
| EP074: 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 97.8 | 76 | 112 |
| EP074: 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 116 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 84.9 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2211540) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 101 | 81 | 116 |
| EP074: 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 97.7 | 75 | 118 |
| EP074: 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 97.6 | 81 | 113 |
| EP074: 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 88.9 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2211540) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 99.0 | 79 | 117 |
| EP075(SIM)A: Phenolic Compounds (QCLot: 2210358) | | | | | | | | |
| EP075(SIM): Phenol | 108-95-2 | 1 | µg/L | <1.0 | 5 µg/L | 33.5 | 20 | 51 |
| EP075(SIM): 2-Chlorophenol | 95-57-8 | 1 | µg/L | <1.0 | 5 µg/L | 73.5 | 46 | 103 |
| EP075(SIM): 2-Methylphenol | 95-48-7 | 1 | µg/L | <1.0 | 5 µg/L | 66.5 | 43 | 98 |
| EP075(SIM): 3- & 4-Methylphenol | 1319-77-3 | 2 | µg/L | <2.0 | 10 µg/L | 62.2 | 41 | 90 |
| EP075(SIM): 2-Nitrophenol | 88-75-5 | 1 | µg/L | <1.0 | 5 µg/L | 99.7 | 44 | 114 |
| EP075(SIM): 2,4-Dimethylphenol | 105-67-9 | 1 | µg/L | <1.0 | 5 µg/L | 74.0 | 43 | 115 |
| EP075(SIM): 2,4-Dichlorophenol | 120-83-2 | 1 | µg/L | <1.0 | 5 µg/L | 85.1 | 48 | 111 |
| EP075(SIM): 2,6-Dichlorophenol | 87-65-0 | 1 | µg/L | <1.0 | 5 µg/L | 87.1 | 50 | 116 |
| EP075(SIM): 4-Chloro-3-methylphenol | 59-50-7 | 1 | µg/L | <1.0 | 5 µg/L | 89.6 | 49 | 110 |
| EP075(SIM): 2,4,6-Trichlorophenol | 88-06-2 | 1 | µg/L | <1.0 | 5 µg/L | 85.8 | 48 | 113 |
| EP075(SIM): 2,4,5-Trichlorophenol | 95-95-4 | 1 | µg/L | <1.0 | 5 µg/L | 90.8 | 47 | 115 |
| EP075(SIM): Pentachlorophenol | 87-86-5 | 2 | µg/L | <2.0 | 10 µg/L | 115 | 48 | 130 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2210358) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 89.3 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 87.6 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 90.6 | 53 | 117 |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 90.9 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 93.7 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 90.5 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 86.3 | 61 | 120 |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 93.2 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 105 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 101 | 57 | 122 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075(SIM): Polynuclear Aromatic Hydrocarbons (QCLot: 2210358) - continued | | | | | | | | |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | 5 µg/L | 102 | 56 | 131 |
| | 205-82-3 | | | | | | | |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 95.9 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 104 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 94.0 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 95.2 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 90.8 | 56 | 124 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2210359) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4030 µg/L | 71.1 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 15600 µg/L | 80.8 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 7820 µg/L | 77.4 | 55 | 130 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2211539) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 117 | 65 | 126 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2210359) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 5960 µg/L | 70.5 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 20700 µg/L | 77.5 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1520 µg/L | 79.4 | 53 | 136 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2211539) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 116 | 64 | 124 |
| EP080: BTEXN (QCLot: 2211539) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 106 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 114 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 113 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 121 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 121 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 110 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|------------------|------------|--------------------------|-------------------------|---------------------|------|
| | | | | Spike
Concentration | Spike Recovery(%)
MS | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | | | Low | High |
| EG005T: Total Metals by ICP-AES (QCLot: 2212133) | | | | | | | |
| EM1902791-001 | Anonymous | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 86.4 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 89.8 | 84 | 116 |



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|-------------------------|---|------------|--------------------------|------------------------|--------------------------------|-----|
| | | | | Spike
Concentration | SpikeRecovery(%)
MS | Recovery Limits (%)
LowHigh | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | | | | |
| EG005T: Total Metals by ICP-AES (QCLot: 2212133) - continued | | | | | | | |
| EM1902791-001 | Anonymous | EG005T: Copper | 7440-50-8 | 50 mg/kg | 95.0 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 92.2 | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 96.2 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 94.3 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 85.3 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 98.3 | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2212134) | | | | | | | |
| EM1902791-001 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.5 mg/kg | 103 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2212112) | | | | | | | |
| EM1902865-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | 71.9 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2212938) | | | | | | | |
| EM1902873-001 | CPT000_BH107_270219_0.3 | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 108 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2213079) | | | | | | | |
| EM1902819-018 | Anonymous | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 88.8 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2210731) | | | | | | | |
| EM1902784-005 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 1.27 mg/kg | 116 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2211670) | | | | | | | |
| EM1902873-005 | CPT000_BH107_270219_2.0 | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 84.2 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 83.8 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2211670) | | | | | | | |
| EM1902873-005 | CPT000_BH107_270219_2.0 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 80.4 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 78.8 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 83.7 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2210733) | | | | | | | |
| EM1902791-001 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 80.7 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 75.2 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 31.6 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2210733) | | | | | | | |
| EM1902791-001 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 85.0 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 55.6 | 13 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2210733) | | | | | | | |
| EM1902791-001 | Anonymous | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 64.6 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 67.9 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2210732) | | | | | | | |
| EM1902784-006 | Anonymous | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 96.2 | 53 | 123 |



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|-------------------------|-------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2210732) - continued | | | | | | | |
| EM1902784-006 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 105 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 96.2 | 64 | 118 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2211670) | | | | | | | |
| EM1902873-005 | CPT000_BH107_270219_2.0 | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 62.9 | 43 | 111 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2210732) | | | | | | | |
| EM1902784-006 | Anonymous | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 106 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 101 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 78.7 | 44 | 126 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2211670) | | | | | | | |
| EM1902873-005 | CPT000_BH107_270219_2.0 | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 58.4 | 42 | 106 |
| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020F: Dissolved Metals by ICP-MS (QCLot: 2214374) | | | | | | | |
| EM1902873-008 | QC357_270219 | EG020A-F: Arsenic | 7440-38-2 | 0.2 mg/L | 94.4 | 85 | 131 |
| | | EG020A-F: Cadmium | 7440-43-9 | 0.05 mg/L | 97.1 | 81 | 133 |
| | | EG020A-F: Copper | 7440-50-8 | 0.2 mg/L | 89.8 | 76 | 130 |
| | | EG020A-F: Lead | 7439-92-1 | 0.2 mg/L | 93.7 | 75 | 133 |
| | | EG020A-F: Nickel | 7440-02-0 | 0.2 mg/L | 93.2 | 73 | 131 |
| | | EG020A-F: Zinc | 7440-66-6 | 0.2 mg/L | 96.8 | 75 | 131 |
| EG035F: Dissolved Mercury by FIMS (QCLot: 2214371) | | | | | | | |
| EM1902754-001 | Anonymous | EG035F: Mercury | 7439-97-6 | 0.01 mg/L | 81.0 | 70 | 120 |
| EG050F: Dissolved Hexavalent Chromium (QCLot: 2210343) | | | | | | | |
| EM1902784-002 | Anonymous | EG050F: Hexavalent Chromium | 18540-29-9 | 0.5 mg/L | 98.0 | 59 | 127 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2212282) | | | | | | | |
| EM1902816-009 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 0.2 mg/L | 103 | 70 | 130 |
| EK040P: Fluoride by PC Titrator (QCLot: 2212033) | | | | | | | |
| EM1902772-001 | Anonymous | EK040P: Fluoride | 16984-48-8 | 5 mg/L | 95.0 | 70 | 130 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2211540) | | | | | | | |
| EM1902816-003 | Anonymous | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 106 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 87.1 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2211540) | | | | | | | |
| EM1902816-003 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 102 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2211539) | | | | | | | |
| EM1902816-003 | Anonymous | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 76.8 | 43 | 125 |



Sub-Matrix: WATER

| | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2211539) | | | | | | | |
| EM1902816-003 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 74.8 | 44 | 122 |
| EP080: BTEXN (QCLot: 2211539) | | | | | | | |
| EM1902816-003 | Anonymous | EP080: Benzene | 71-43-2 | 20 µg/L | 91.3 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 98.6 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|---------------------------|-------------------------|------------------------------------|
| Work Order | : EM1902873 | Page | : 1 of 13 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 27-Feb-2019 |
| Site | : GIJPP EES | Issue Date | : 06-Mar-2019 |
| Sampler | : [REDACTED] | No. of samples received | : 10 |
| Order number | : 60592634 Task 1 | No. of samples analysed | : 8 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Matrix Spike outliers occur.
- Laboratory Control outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|---------|------------|--------|---------|--|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP075I: Organochlorine Pesticides | QC-2210733-001 | ---- | Endrin | 72-20-8 | 47.8 % | 55-148% | Recovery less than lower control limit |

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

| Method | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|--------------------|--------------|---------------|------------------|--------------|
| | Date extracted | Due for extraction | Days overdue | Date analysed | Due for analysis | Days overdue |
| EA005P: pH by PC Titrator | | | | | | |
| Clear Plastic Bottle - Natural
QC357_270219 | ---- | ---- | ---- | 01-Mar-2019 | 27-Feb-2019 | 2 |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|---------------------------------|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 3 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | 0 | 1 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 1 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 10 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 3 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 10 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---------------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| Container / Client Sample ID(s) | | | | | | | |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 04-Mar-2019 | 06-Mar-2019 | ✓ | 04-Mar-2019 | 04-Mar-2019 | ✓ |
| EA033-A: Actual Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_BH107_270219_0.5, | CPT000_BH107_270219_2.5 | 27-Feb-2019 | 05-Mar-2019 | 27-Feb-2020 | ✓ | 05-Mar-2019 | 03-Jun-2019 | ✓ |
| EA033-B: Potential Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_BH107_270219_0.5, | CPT000_BH107_270219_2.5 | 27-Feb-2019 | 05-Mar-2019 | 27-Feb-2020 | ✓ | 05-Mar-2019 | 03-Jun-2019 | ✓ |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_BH107_270219_0.5, | CPT000_BH107_270219_2.5 | 27-Feb-2019 | 05-Mar-2019 | 27-Feb-2020 | ✓ | 05-Mar-2019 | 03-Jun-2019 | ✓ |
| EA033-D: Retained Acidity | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_BH107_270219_0.5, | CPT000_BH107_270219_2.5 | 27-Feb-2019 | 05-Mar-2019 | 27-Feb-2020 | ✓ | 05-Mar-2019 | 03-Jun-2019 | ✓ |
| EA033-E: Acid Base Accounting | | | | | | | | |
| Snap Lock Bag - frozen on receipt at ALS (EA033)
CPT000_BH107_270219_0.5, | CPT000_BH107_270219_2.5 | 27-Feb-2019 | 05-Mar-2019 | 27-Feb-2020 | ✓ | 05-Mar-2019 | 03-Jun-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EG005T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 01-Mar-2019 | 26-Aug-2019 | ✓ | 01-Mar-2019 | 26-Aug-2019 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 01-Mar-2019 | 27-Mar-2019 | ✓ | 04-Mar-2019 | 27-Mar-2019 | ✓ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 01-Mar-2019 | 27-Mar-2019 | ✓ | 01-Mar-2019 | 08-Mar-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 04-Mar-2019 | 15-Mar-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 01-Mar-2019 | 27-Mar-2019 | ✓ | 05-Mar-2019 | 27-Mar-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 28-Feb-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 06-Mar-2019 | ✓ |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 06-Mar-2019 | ✓ |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 06-Mar-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 28-Feb-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 28-Feb-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 28-Feb-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 28-Feb-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT000_BH107_270219_0.3,
QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 06-Mar-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|--------------------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | | | | | | | |
| CPT000_BH107_270219_0.3, QC156_270219 | CPT000_BH107_270219_2.0, | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✔ | 01-Mar-2019 | 06-Mar-2019 | ✔ |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Evaluation | Analysis | |
|---|-------------|--------------------------|--------------------|------------|-------------|---------------|------------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | | Date analysed | Due for analysis |
| EA005P: pH by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EA005-P)
QC357_270219 | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 27-Feb-2019 | ✖ |
| EG020F: Dissolved Metals by ICP-MS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG020B-F)
QC357_270219 | 27-Feb-2019 | ---- | ---- | ---- | 04-Mar-2019 | 26-Aug-2019 | ✓ |
| EG035F: Dissolved Mercury by FIMS | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)
QC357_270219 | 27-Feb-2019 | ---- | ---- | ---- | 04-Mar-2019 | 27-Mar-2019 | ✓ |
| EG050F: Dissolved Hexavalent Chromium | | | | | | | |
| Opaque plastic bottle - NaOH (EG050F)
QC357_270219 | 27-Feb-2019 | ---- | ---- | ---- | 28-Feb-2019 | 27-Mar-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | |
| Opaque plastic bottle - NaOH (EK026SF)
QC357_270219 | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EK040P: Fluoride by PC Titrator | | | | | | | |
| Clear Plastic Bottle - Natural (EK040P)
QC357_270219 | 27-Feb-2019 | ---- | ---- | ---- | 01-Mar-2019 | 27-Mar-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
QC357_270219 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP068A: Organochlorine Pesticides (OC) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP068)
QC357_270219 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC357_270219 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC357_270219 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC357_270219 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC357_270219 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP075(SIM)A: Phenolic Compounds | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
QC357_270219 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
QC357_270219 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC357_270219 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC357_270219, QC457_270219, QC565_270219 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC357_270219 | 27-Feb-2019 | 28-Feb-2019 | 06-Mar-2019 | ✓ | 01-Mar-2019 | 09-Apr-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC357_270219, QC457_270219, QC565_270219 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |
| EP080: BTEXN | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC357_270219, QC457_270219, QC565_270219 | 27-Feb-2019 | 01-Mar-2019 | 13-Mar-2019 | ✓ | 01-Mar-2019 | 13-Mar-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 2 | 50.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 8 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 8 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 3 | 20 | 15.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 8 | 12.50 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 2 | 50.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 8 | 12.50 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Laboratory Control Samples (LCS) | | | | | | | |
|--|------------|---|----|--------|------|---|--------------------------------|
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | EP068 | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 10 | 10.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 10 | 10.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |

Method Blanks (MB)



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 3 | 33.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | EP068 | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 1 | 100.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 10 | 10.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 10 | 10.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Dissolved Mercury by FIMS | EG035F | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Fluoride by PC Titrator | EK040P | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium - Dissolved | EG050F | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 3 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | EP068 | 0 | 1 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 1 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 10 | 10.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 10 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|--|
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| pH by PC Titrator | EA005-P | WATER | In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) |
| Dissolved Metals by ICP-MS - Suite A | EG020A-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Metals by ICP-MS - Suite B | EG020B-F | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Dissolved Mercury by FIMS | EG035F | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium - Dissolved | EG050F | WATER | In house: Referenced to APHA 3500 Cr-B. Samples are 0.45µm filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazine. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | WATER | In house: Referenced to APHA 4500-CN C / ASTM D7511. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|------------|--------|--|
| Fluoride by PC Titrator | EK040P | WATER | In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3) |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Pesticides by GCMS | EP068 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | WATER | In house: Referenced to USEPA SW 846 - 8270B Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |

| Preparation Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|---|
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |



| Preparation Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|--|
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Separatory Funnel Extraction of Liquids | ORG14-EM | WATER | In house: Referenced to USEPA SW 846 - 3510B. 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using dichloromethane. The resultant extracts are combined, dehydrated, concentrated and exchanged into toluene for analysis. This method is compliant with NEPM (2013) Schedule B(3). ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

[REDACTED]

From: [REDACTED]@alsglobal.com>
Sent: Tuesday, 12 March 2019 4:45 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: GIJPP QC Sample Result for EM1902873

Hi [REDACTED]

Unfortunately, I was not able to provide any additional info on the Zn result other than the sample being re-analysed and confirmed

FYI, we have monthly internal checks on the water we send out for metals and no hits were found from January and February's QC checks

Thanks

Regards

[REDACTED]
Client Services – Springvale
Environmental



T +61 3 8549 9600
F +61 3 8549 9626
[REDACTED]@alsglobal.com
2-4 Westall Rd
Springvale Vic 3171
Australia

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See how ALS is making sampling easier! [Register](#) your interest here.

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www.alsglobal.com

From: [REDACTED]@aecom.com]
Sent: Friday, 8 March 2019 12:32 PM
To: [REDACTED]@alsglobal.com>

Cc: [REDACTED]@aecom.com>
Subject: GIJPP QC Sample Result for EM1902873

Hi [REDACTED]

Could you please see if there were any further lab notes for the Zinc concentration in our rinsate sample QC357_270219.

I know the COA said the result had been confirmed by re-preparation and re-analysis, but thought it best to check.

Many thanks,

[REDACTED]
Environmental Scientist
D +61 3 9653 8014
[REDACTED] [aecom.com](mailto:[REDACTED]@aecom.com)

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
www.aecom.com

Please consider the environment before printing this email.

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1906206**

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 4 |
| Order number | : ---- | Quote number | : EP2016AECOMAU0014 (EN/096/18) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : GIJPP EES Fieldwork | | |
| Sampler | : [REDACTED] | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 26-Apr-2019 17:30 | Issue Date | : 26-Apr-2019 |
| Client Requested Due Date | : 06-May-2019 | Scheduled Reporting Date | : 06-May-2019 |

Delivery Details

| | | | |
|----------------------|-----------|------------------------------------|------------------------|
| Mode of Delivery | : Carrier | Security Seal | : Intact. |
| No. of coolers/boxes | : 4 | Temperature | : 10.0°C - Ice present |
| Receipt Detail | : | No. of samples received / analysed | : 37 / 37 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA recommends samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

□ **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM1906206-001 : [26-Apr-2019] : CPT018_BH06_260419_0.2
EM1906206-002 : [26-Apr-2019] : CPT018_BH06_260419_0.5
EM1906206-003 : [26-Apr-2019] : CPT018_BH06_260419_1.0
EM1906206-004 : [26-Apr-2019] : CPT018_BH06_260419_1.5
EM1906206-005 : [26-Apr-2019] : CPT018_BH06_260419_2.0
EM1906206-006 : [26-Apr-2019] : CPT018_BH06_260419_2.5
EM1906206-007 : [26-Apr-2019] : CPT020_BH104_260419_0.2
EM1906206-008 : [26-Apr-2019] : CPT020_BH104_260419_0.5
EM1906206-009 : [26-Apr-2019] : CPT020_BH104_260419_1.0
EM1906206-010 : [26-Apr-2019] : CPT020_BH104_260419_1.5
EM1906206-011 : [26-Apr-2019] : CPT020_BH104_260419_2.0
EM1906206-012 : [26-Apr-2019] : CPT020_BH104_260419_2.5
EM1906206-013 : [26-Apr-2019] : CPT018_BH103_260419_0.2
EM1906206-014 : [26-Apr-2019] : CPT018_BH103_260419_0.5
EM1906206-015 : [26-Apr-2019] : CPT018_BH103_260419_1.0
EM1906206-016 : [26-Apr-2019] : CPT018_BH103_260419_1.5
EM1906206-017 : [26-Apr-2019] : CPT018_BH103_260419_2.0
EM1906206-018 : [26-Apr-2019] : CPT018_BH103_260419_2.5
EM1906206-019 : [26-Apr-2019] : CPT020_BH105_260419_0.5
EM1906206-020 : [26-Apr-2019] : CPT020_BH105_260419_1.0
EM1906206-021 : [26-Apr-2019] : CPT020_BH105_260419_1.5
EM1906206-022 : [26-Apr-2019] : CPT020_BH105_260419_2.0
EM1906206-023 : [26-Apr-2019] : CPT020_BH105_260419_2.5
EM1906206-024 : [26-Apr-2019] : CPT021_BH106_260419_0.2
EM1906206-025 : [26-Apr-2019] : CPT021_BH106_260419_0.5
EM1906206-026 : [26-Apr-2019] : CPT021_BH106_260419_1.0
EM1906206-027 : [26-Apr-2019] : CPT021_BH106_260419_1.5
EM1906206-028 : [26-Apr-2019] : CPT021_BH106_260419_2.0
EM1906206-029 : [26-Apr-2019] : CPT021_BH106_260419_2.5

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 | SOIL - S-04
TRH/BTEXN |
|----------------------|-----------------------------|-------------------------|--|--------------------------------------|-------------------------|--------------------------|
| EM1906206-001 | 26-Apr-2019 00:00 | CPT018_BH06_260419_0... | □ | □ | □ | |
| EM1906206-002 | 26-Apr-2019 00:00 | CPT018_BH06_260419_0... | □ | □ | □ | |
| EM1906206-003 | 26-Apr-2019 00:00 | CPT018_BH06_260419_1... | □ | □ | □ | |
| EM1906206-004 | 26-Apr-2019 00:00 | CPT018_BH06_260419_1... | □ | □ | □ | |
| EM1906206-005 | 26-Apr-2019 00:00 | CPT018_BH06_260419_2... | □ | □ | □ | |
| EM1906206-006 | 26-Apr-2019 00:00 | CPT018_BH06_260419_2... | □ | □ | □ | |
| EM1906206-007 | 26-Apr-2019 00:00 | CPT020_BH104_260419_... | □ | □ | □ | |
| EM1906206-008 | 26-Apr-2019 00:00 | CPT020_BH104_260419_... | □ | □ | □ | |
| EM1906206-009 | 26-Apr-2019 00:00 | CPT020_BH104_260419_... | □ | □ | □ | |



| | | | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 | SOIL - S-04
TRH/BTEXN |
|---------------|-------------------|-------------------------|--|--------------------------------------|-------------------------|--------------------------|
| EM1906206-010 | 26-Apr-2019 00:00 | CPT020_BH104_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-011 | 26-Apr-2019 00:00 | CPT020_BH104_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-012 | 26-Apr-2019 00:00 | CPT020_BH104_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-013 | 26-Apr-2019 00:00 | CPT018_BH103_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-014 | 26-Apr-2019 00:00 | CPT018_BH103_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-015 | 26-Apr-2019 00:00 | CPT018_BH103_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-016 | 26-Apr-2019 00:00 | CPT018_BH103_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-017 | 26-Apr-2019 00:00 | CPT018_BH103_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-018 | 26-Apr-2019 00:00 | CPT018_BH103_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-019 | 26-Apr-2019 00:00 | CPT020_BH105_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-020 | 26-Apr-2019 00:00 | CPT020_BH105_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-021 | 26-Apr-2019 00:00 | CPT020_BH105_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-022 | 26-Apr-2019 00:00 | CPT020_BH105_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-023 | 26-Apr-2019 00:00 | CPT020_BH105_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-024 | 26-Apr-2019 00:00 | CPT021_BH106_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-025 | 26-Apr-2019 00:00 | CPT021_BH106_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-026 | 26-Apr-2019 00:00 | CPT021_BH106_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-027 | 26-Apr-2019 00:00 | CPT021_BH106_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-028 | 26-Apr-2019 00:00 | CPT021_BH106_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-029 | 26-Apr-2019 00:00 | CPT021_BH106_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-030 | 26-Apr-2019 00:00 | QC156_260419 | ☐ | ☐ | ☐ | |
| EM1906206-031 | 26-Apr-2019 00:00 | QC157_260419 | ☐ | ☐ | ☐ | |
| EM1906206-034 | 26-Apr-2019 00:00 | QC565_260419 | | ☐ | | ☐ |
| EM1906206-035 | 26-Apr-2019 00:00 | QC566_260419 | | ☐ | | ☐ |
| EM1906206-036 | 26-Apr-2019 00:00 | QC567_260419 | | ☐ | | ☐ |
| EM1906206-037 | 26-Apr-2019 00:00 | QC568_260419 | | ☐ | | ☐ |

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1906206**

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 4 |
| Order number | : ---- | Quote number | : EP2016AECOMAU0014 (EN/096/18) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : GIJPP EES Fieldwork | | |
| Sampler | : BH | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 26-Apr-2019 17:30 | Issue Date | : 26-Apr-2019 |
| Client Requested Due Date | : 06-May-2019 | Scheduled Reporting Date | : 06-May-2019 |

Delivery Details

| | | | |
|----------------------|-----------|------------------------------------|------------------------|
| Mode of Delivery | : Carrier | Security Seal | : Intact. |
| No. of coolers/boxes | : 4 | Temperature | : 10.0°C - Ice present |
| Receipt Detail | : | No. of samples received / analysed | : 37 / 37 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Brisbane.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA recommends samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

□ **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

| | | |
|---------------|-------------------|---------------------------|
| EM1906206-001 | : [26-Apr-2019] | : CPT018_BH06_260419_0.2 |
| EM1906206-002 | : [26-Apr-2019] | : CPT018_BH06_260419_0.5 |
| EM1906206-003 | : [26-Apr-2019] | : CPT018_BH06_260419_1.0 |
| EM1906206-004 | : [26-Apr-2019] | : CPT018_BH06_260419_1.5 |
| EM1906206-005 | : [26-Apr-2019] | : CPT018_BH06_260419_2.0 |
| EM1906206-006 | : [26-Apr-2019] | : CPT018_BH06_260419_2.5 |
| EM1906206-007 | : [26-Apr-2019] | : CPT020_BH104_260419_0.2 |
| EM1906206-008 | : [26-Apr-2019] | : CPT020_BH104_260419_0.5 |
| EM1906206-009 | : [26-Apr-2019] | : CPT020_BH104_260419_1.0 |
| EM1906206-010 | : [26-Apr-2019] | : CPT020_BH104_260419_1.5 |
| EM1906206-011 | : [26-Apr-2019] | : CPT020_BH104_260419_2.0 |
| EM1906206-012 | : [26-Apr-2019] | : CPT020_BH104_260419_2.5 |
| EM1906206-013 | : [26-Apr-2019] | : CPT018_BH103_260419_0.2 |
| EM1906206-014 | : [26-Apr-2019] | : CPT018_BH103_260419_0.5 |
| EM1906206-015 | : [26-Apr-2019] | : CPT018_BH103_260419_1.0 |
| EM1906206-016 | : [26-Apr-2019] | : CPT018_BH103_260419_1.5 |
| EM1906206-017 | : [26-Apr-2019] | : CPT018_BH103_260419_2.0 |
| EM1906206-018 | : [26-Apr-2019] | : CPT018_BH103_260419_2.5 |
| EM1906206-019 | : [26-Apr-2019] | : CPT020_BH105_260419_0.5 |
| EM1906206-020 | : [26-Apr-2019] | : CPT020_BH105_260419_1.0 |
| EM1906206-021 | : [26-Apr-2019] | : CPT020_BH105_260419_1.5 |
| EM1906206-022 | : [26-Apr-2019] | : CPT020_BH105_260419_2.0 |
| EM1906206-023 | : [26-Apr-2019] | : CPT020_BH105_260419_2.5 |
| EM1906206-024 | : [26-Apr-2019] | : CPT021_BH106_260419_0.2 |
| EM1906206-025 | : [26-Apr-2019] | : CPT021_BH106_260419_0.5 |
| EM1906206-026 | : [26-Apr-2019] | : CPT021_BH106_260419_1.0 |
| EM1906206-027 | : [26-Apr-2019] | : CPT021_BH106_260419_1.5 |
| EM1906206-028 | : [26-Apr-2019] | : CPT021_BH106_260419_2.0 |
| EM1906206-029 | : [26-Apr-2019] | : CPT021_BH106_260419_2.5 |

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 | SOIL - S-18
TRH(C6-C9)/BTEXN |
|----------------------|-----------------------------|-------------------------|--|--------------------------------------|-------------------------|---------------------------------|
| EM1906206-001 | 26-Apr-2019 00:00 | CPT018_BH06_260419_0... | □ | □ | □ | |
| EM1906206-002 | 26-Apr-2019 00:00 | CPT018_BH06_260419_0... | □ | □ | □ | |
| EM1906206-003 | 26-Apr-2019 00:00 | CPT018_BH06_260419_1... | □ | □ | □ | |
| EM1906206-004 | 26-Apr-2019 00:00 | CPT018_BH06_260419_1... | □ | □ | □ | |
| EM1906206-005 | 26-Apr-2019 00:00 | CPT018_BH06_260419_2... | □ | □ | □ | |
| EM1906206-006 | 26-Apr-2019 00:00 | CPT018_BH06_260419_2... | □ | □ | □ | |
| EM1906206-007 | 26-Apr-2019 00:00 | CPT020_BH104_260419_... | □ | □ | □ | |
| EM1906206-008 | 26-Apr-2019 00:00 | CPT020_BH104_260419_... | □ | □ | □ | |
| EM1906206-009 | 26-Apr-2019 00:00 | CPT020_BH104_260419_... | □ | □ | □ | |



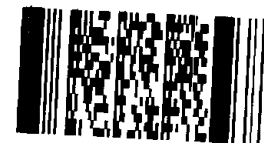
| | | | SOIL - EA033
Chromium Suite for Acid Sulphate Soils | SOIL - EA055-103
Moisture Content | SOIL - P-16
IWRG 621 | SOIL - S-18
TRH(C6-C9)/BTEXN |
|---------------|-------------------|-------------------------|--|--------------------------------------|-------------------------|---------------------------------|
| EM1906206-010 | 26-Apr-2019 00:00 | CPT020_BH104_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-011 | 26-Apr-2019 00:00 | CPT020_BH104_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-012 | 26-Apr-2019 00:00 | CPT020_BH104_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-013 | 26-Apr-2019 00:00 | CPT018_BH103_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-014 | 26-Apr-2019 00:00 | CPT018_BH103_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-015 | 26-Apr-2019 00:00 | CPT018_BH103_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-016 | 26-Apr-2019 00:00 | CPT018_BH103_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-017 | 26-Apr-2019 00:00 | CPT018_BH103_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-018 | 26-Apr-2019 00:00 | CPT018_BH103_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-019 | 26-Apr-2019 00:00 | CPT020_BH105_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-020 | 26-Apr-2019 00:00 | CPT020_BH105_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-021 | 26-Apr-2019 00:00 | CPT020_BH105_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-022 | 26-Apr-2019 00:00 | CPT020_BH105_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-023 | 26-Apr-2019 00:00 | CPT020_BH105_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-024 | 26-Apr-2019 00:00 | CPT021_BH106_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-025 | 26-Apr-2019 00:00 | CPT021_BH106_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-026 | 26-Apr-2019 00:00 | CPT021_BH106_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-027 | 26-Apr-2019 00:00 | CPT021_BH106_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-028 | 26-Apr-2019 00:00 | CPT021_BH106_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-029 | 26-Apr-2019 00:00 | CPT021_BH106_260419_... | ☐ | ☐ | ☐ | |
| EM1906206-030 | 26-Apr-2019 00:00 | QC156_260419 | ☐ | ☐ | ☐ | |
| EM1906206-031 | 26-Apr-2019 00:00 | QC157_260419 | ☐ | ☐ | ☐ | |
| EM1906206-034 | 26-Apr-2019 00:00 | QC565_260419 | | ☐ | | ☐ |
| EM1906206-035 | 26-Apr-2019 00:00 | QC566_260419 | | ☐ | | ☐ |
| EM1906206-036 | 26-Apr-2019 00:00 | QC567_260419 | | ☐ | | ☐ |
| EM1906206-037 | 26-Apr-2019 00:00 | QC568_260419 | | ☐ | | ☐ |

ANZ
FQM - Generic Chain of Custody Form

| | | | | | | | | | | | |
|--|-------------------------|--------|--|------|-------------|--|--|--|------------------------|--|--|
| CONSULTANT: | | | ADDRESS / OFFICE: | | | SAMPLER: <i>B. Harkness</i> | | | Destination Laboratory | | |
| PROJECT MANAGER (PM): | | | SITE: GUJPP EES Fieldwork | | | MOBILE: | | | PHONE: | | |
| PROJECT NUMBER & TASK CODE: 60592634 | | | P.O. NO.: | | | EMAIL REPORT TO: | | | | | |
| RESULTS REQUIRED (Date): | | | QUOTE NO.: | | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | | | |
| FOR LABORATORY USE ONLY | | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | | | | |
| COOLER SEAL (circle appropriate) | | | | | | | | | | | |
| Intact: Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> | | | | | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | | | | | |
| CHILLED: Yes <input type="checkbox"/> No <input type="checkbox"/> | | | | | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | | | | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | | | | | |
| 1 | CPT019 BH06-260419-0.2 | S | 26/04/17 | PM | JAR / AG | 1 JAR | | | | | |
| 2 | " " -0.5 | | | | | 2 BAG | | | | | |
| 3 | " " -1.0 | | | | | | | | | | |
| 4 | " " -1.5 | | | | | | | | | | |
| 5 | " " -2.0 | | | | | | | | | | |
| 6 | " " -2.5 | | | | | | | | | | |
| 7 | CPT020 BH04-260419-0.2 | | | | | | | | | | |
| 8 | " " -0.5 | | | | | | | | | | |
| 9 | " " -1.0 | | | | | | | | | | |
| 10 | " " -1.5 | | | | | | | | | | |
| 11 | " " -2.0 | | | | | | | | | | |
| 12 | " " -2.5 | | | | | | | | | | |
| 13 | CPT018 BH103-260419-0.2 | | | | | | | | | | |
| 14 | " " -0.5 | | | | | | | | | | |
| 15 | " " -1.0 | | | | | | | | | | |
| 16 | " " -1.5 | | | | | | | | | | |
| 17 | " " -2.0 | | | | | | | | | | |
| 18 | " " -2.5 | | | | | | | | | | |
| 19 | CPT022 BH105-260419-0.5 | | | | | | | | | | |
| RELINQUISHED BY: | | | | | | RECEIVED BY: | | | RECEIVED BY: | | |
| Name: <i>S. Harkness</i> | | | | | | Name: <i>Tam</i> | | | Name: | | |
| Date: <i>26/04/17</i> | | | | | | Date: <i>26/04/17</i> | | | Date: | | |
| Time: <i>PM</i> | | | | | | Time: <i>17:30</i> | | | Time: | | |
| Of: <i>ACOM</i> | | | | | | Of: <i>AG</i> | | | Of: | | |
| METHOD OF SHIPMENT: | | | | | | Con' Note No: | | | Transport Co: | | |
| <p>Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic</p> <p>V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;</p> <p>F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.</p> <p>Soil Container Codes: Jar = Unpreserved glass jar</p> | | | | | | | | | | | |

Forwarded to
Secondary Lab
on SM Date 26/4.

Environmental Division
Melbourne
Work Order Reference
EM1906206



Telephone: + 61-3-8549 9800

COC Page of

FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|------------------------|--|--------------------|--|------------------|------------------------|----------------------|
| CONSULTANT: <i>AECOM</i> | | ADDRESS / OFFICE: | | SAMPLER: <i>Fieldwork</i> | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: <i>GLPP EES Fieldwork</i> | | MOBILE: | | PHONE: | |
| PROJECT NUMBER & TASK COI <i>60592634</i> | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | |
| COOLER SEAL (circle appropriate) | | | | | | | |
| Intact: Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes <input type="checkbox"/> No <input type="checkbox"/> | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W=Water) | | | | CONTAINER INFORMATION | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 20 | <i>Q6105-26049-1.0</i> | <i>S</i> | <i>26/04/19</i> | <i>PM</i> | <i>JAR / BAG</i> | <i>1</i> | <i>WELGA</i> |
| 21 | <i>" "</i> | | | | | | <i>Chromium site</i> |
| 22 | <i>" "</i> | | | | | | <i>(K4033)</i> |
| 23 | <i>" "</i> | | | | | | <i>TP4 (C6-9)</i> |
| 24 | <i>Q6106-26049-0.2</i> | | | | | | <i>BTEX</i> |
| 25 | <i>" "</i> | | | | | | |
| 26 | <i>" "</i> | | | | | | |
| 27 | <i>" "</i> | | | | | | |
| 28 | <i>" "</i> | | | | | | |
| 29 | <i>" "</i> | | | | | | |
| 30 | <i>QC156-26049</i> | | | | <i>JAR</i> | <i>1</i> | |
| 31 | <i>QC157-26049</i> | | | | <i>JAR</i> | <i>1</i> | |
| 32 | <i>QC357-26049</i> | <i>W</i> | | | <i>Bottles</i> | <i>3</i> | |
| 33 | <i>QC457-26049</i> | | | | <i>JAR</i> | <i>3</i> | |
| 34 | <i>QC565-26049</i> | <i>S</i> | | | <i>JAR</i> | <i>1</i> | |
| 35 | <i>QC566-26049</i> | | | | | | |
| 36 | <i>QC567-26049</i> | | | | | | |
| 37 | <i>QC568-26049</i> | | | | | | |
| RELINQUISHED BY: <i>Fieldwork</i> | | RECEIVED BY: <i>Tam</i> | | RECEIVED BY: | | METHOD OF SHIPMENT | |
| Name: | Date: <i>26/04/19</i> | Name: | Date: <i>26/4</i> | Name: | Date: | Con' Note No: | |
| Of: <i>AECOM</i> | Time: <i>PM</i> | Of: <i>AB</i> | Time: <i>12:30</i> | Of: | Time: | Transport Co: | |
| <p>Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic</p> <p>V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;</p> <p>F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.</p> <p>Soil Container Codes: Jar = Unpreserved glass jar</p> | | | | | | | |

COC Page of

ANZ
FQM - Generic Chain of Custody Form

| CONSULTANT: | | ADDRESS / OFFICE: | | SAMPLER: | | Destination Laboratory | |
|---|-------------------------|--|----------------|--|-------------|---|--|
| PROJECT MANAGER (PM): | | SITE: | | MOBILE: | | PHONE: | |
| PROJECT NUMBER & TASK CODE: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (date): | | QUOTE NO.: | | ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc. | |
| COOLER SEAL (circle appropriate) | | | | | | | |
| Intact: Yes No | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes No | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | CPT018-BH103-260419-0.2 | S | 26/04/17 | PM | JAN 100 | 2 | |
| 2 | " | -0.5 | | | | | |
| 3 | " | -1.0 | | | | | |
| 4 | " | -1.5 | | | | | |
| 5 | " | -2.0 | | | | | |
| 6 | " | -2.5 | | | | | |
| 7 | CPT020-BH104-260419-0.2 | | | | | | |
| 8 | " | -0.5 | | | | | |
| 9 | " | -1.0 | | | | | |
| 10 | " | -1.5 | | | | | |
| 11 | " | -2.0 | | | | | |
| 12 | " | -2.5 | | | | | |
| 13 | CPT018-BH103-260419-0.2 | | | | | | |
| 14 | " | -0.5 | | | | | |
| 15 | " | -1.0 | | | | | |
| 16 | " | -1.5 | | | | | |
| 17 | " | -2.0 | | | | | |
| 18 | " | -2.5 | | | | | |
| 19 | CPT020-BH105-260419-0.5 | | | | | | |
| RELINQUISHED BY: | | RECEIVED BY: | | | | | |
| Name: S. V. V. V. | Date: 26/04/17 | Name: J. M. J. | Date: 26/04/17 | | | | |
| Of: AECOM | Time: PM | Of: AB | Time: 17:30 | | | | |
| Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cu Preserved; S = Sodium Hydroxide/Cu Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Airfreight Unpreserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Plastic; H = HCl preserved Plastic; J = Jar = Unpreserved glass jar | | | | | | | |
| F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Salts; B = Unpreserved Bag | | | | | | | |

Environmental Division
Melbourne
Work Order Reference
EM1906206

Telephone : + 61-3-8549 9800

COC Page of

SH 26/4.

ANZ

| | | | | | | | |
|--|------------------------|--|----------|--|-------------|------------------------|--|
| CONSULTANT: Atkinson | | ADDRESS / OFFICE: | | SAMPLER: Atkinson | | Destination Laboratory | |
| PROJECT MANAGER (PM): Atkinson | | SITE: GUPP EES Fieldwork | | MOBILE: [REDACTED] | | | |
| PROJECT NUMBER & TASK COI: 60592634 | | P.O. NO.: | | EMAIL REPORT TO: [REDACTED] | | | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | |
| COOLER SEAL (circle appropriate) | | | | | | | |
| Intact: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 20 | 00020-51105-260419-1.0 | S | 26/04/19 | 10:00 | JAR / BAG | 1 BAG | |
| 21 | " " -1.5 | | | | | | |
| 22 | " " -2.0 | | | | | | |
| 23 | " " -2.5 | | | | | | |
| 24 | 00024-51106-260419-0.2 | | | | | | |
| 25 | " " -0.5 | | | | | | |
| 26 | " " -1.0 | | | | | | |
| 27 | " " -1.5 | | | | | | |
| 28 | " " -2.0 | | | | | | |
| 29 | " " -2.5 | | | | | | |
| 30 | 00156-260419 | | | | JAR | 1 JAR | |
| 31 | 00157-260419 | | | | JAR | 1 JAR | |
| 32 | 00357-260419 | | | | BOTTLES | 3 | |
| 33 | 00457-260419 | | | | JAR | 1 | |
| 34 | 00565-260419 | | | | JAR | 1 | |
| 35 | 00566-260419 | | | | JAR | 1 | |
| 36 | 00567-260419 | | | | JAR | 1 | |
| 37 | 00568-260419 | | | | JAR | 1 | |

From: Samples Melbourne
To: [REDACTED]
Subject: RE: SRN for ALS Workorder : EM1906206 | Overall Description: GIJPP EES Fieldwork

From: [REDACTED]@aecom.com]
Sent: Friday, 26 April 2019 8:38 PM
To: [REDACTED]@alsglobal.com>
Cc: Melbourne Enviro Services <MelbourneEnviroSer@alsglobal.com>
Subject: RE: SRN for ALS Workorder : EM1906206 | Overall Description: GIJPP EES Fieldwork

Hi [REDACTED]

Can you please update the SRN? We're not going to analyses every samples.

Can you please kindly update the following IDs:

1. QC156_260419 to QC157_260419
2. QC157_260419 to QC158_260419
3. QC256_260419 to QC257_260419 → N/A
4. QC257_260419 to QC258_260419 → N/A
5. QC357_260419 to QC358_260419
6. QC457_260419 to QC458_260419
7. QC565_260419 to QC566_260419
8. QC566_260419 to QC567_260419
9. QC567_260419 to QC568_260419
10. QC568_260419 to QC569_260419

And, please analyse for the following:

Unaccounted for: 3
4
9
11
12
17
18
20
22
23
28
29

Analysis
Removed

1. CPT018_BH06_260419_0.2 = IWRG621
 2. CPT018_BH06_260419_2.5 = IWRG621
 3. CPT018_BH103_260419_0.2 = IWRG621
 4. CPT018_BH103_260419_1.0 = IWRG621
 5. CPT020_BH104_260419_0.2 = IWRG621
 6. CPT020_BH104_260419_1.5 = IWRG621
 7. CPT020_BH105_260419_0.5 = IWRG621
 8. CPT020_BH105_260419_1.5 = IWRG621
 9. CPT021_BH106_260419_0.2 = IWRG621
 10. CPT021_BH106_260419_1.0 = IWRG621
 11. CPT018_BH06_260419_0.5 = Chromium Suite (EA033)
 12. CPT018_BH06_260419_2.0 = Chromium Suite (EA033)
 13. CPT018_BH103_260419_0.5 = Chromium Suite (EA033)
 14. CPT018_BH103_260419_1.5 = Chromium Suite (EA033)
 15. CPT020_BH104_260419_0.5 = Chromium Suite (EA033)
 16. CPT020_BH104_260419_1.5 = Chromium Suite (EA033)
 17. CPT020_BH105_260419_0.5 = Chromium Suite (EA033)
 18. CPT020_BH105_260419_1.5 = Chromium Suite (EA033)
 19. CPT021_BH106_260419_0.5 = Chromium Suite (EA033)
 20. CPT021_BH106_260419_1.5 = Chromium Suite (EA033)
 21. QC157_260419 = IWRG621
 22. QC158_260419 = IWRG621
 23. QC257_260419 = IWRG621 (Triplicate, please forward to Eurofins)
 24. QC258_260419 = IWRG621 (Triplicate, please forward to Eurofins)
 25. QC358_260419 = IWRG621 water equivalent
 26. QC458_260419 = TPH(C6-C9)/BTEXN
 27. QC566_260419 = TPH(C6-C9)/BTEXN
 28. QC567_260419 = TPH(C6-C9)/BTEXN
 29. QC568_260419 = TPH(C6-C9)/BTEXN
 30. QC569_260419 = TPH(C6-C9)/BTEXN
- } sent

At 3 days TAT. Thanks!

[REDACTED]
Senior Environmental Engineer

[REDACTED]
[REDACTED]@aecom.com

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008

T +61 3 9653 1234 F +61 3 9654 7117

aecom.com

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CERTIFICATE OF ANALYSIS

Work Order : **EM1906206**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number :
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP EES Fieldwork
Quote number : EN/096/18
No. of samples received : 37
No. of samples analysed : 25

Page : 1 of 33
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 26-Apr-2019 17:30
Date Analysis Commenced : 26-Apr-2019
Issue Date : 03-May-2019 10:46



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|-------------------------------------|---|
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Inorganic Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | 2IC Organic Chemist | Melbourne Organics, Springvale, VIC |
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |
| [REDACTED] | Senior Organic Chemist | Melbourne Organics, Springvale, VIC |



The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EG048G: EM1906206 #24, poor matrix spike recovery for Hexavalent Chromium due to sample matrix interferences.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- ASS: EA033 (CRS Suite):Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m3 in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m3'.



□ □ □ □ □ □ □ □ □ □

| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT018_BH06_26041
9_0.2 | CPT018_BH06_26041
9_0.5 | CPT018_BH06_26041
9_2.0 | CPT018_BH06_26041
9_2.5 | CPT020_BH104_2604
19_0.2 |
|--|------------|-------|-------------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-001 | EM1906206-002 | EM1906206-005 | EM1906206-006 | EM1906206-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 5.5 | ---- | ---- | 5.7 | 5.6 |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 7.1 | 5.3 | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | <2 | 8 | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | <0.02 | <0.02 | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | 0.008 | <0.005 | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | ---- |
| EA033-C: Acid Neutralising Capacity | | | | | | | | | |
| Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | | ---- | 0.19 | ---- | ---- | ---- |
| acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | | ---- | 38 | ---- | ---- | ---- |
| sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | | ---- | 0.06 | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | 1.5 | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | <0.02 | <0.02 | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | <1 | <1 | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | <0.02 | <0.02 | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | <10 | <10 | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | <1 | <1 | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 8.7 | ---- | ---- | 22.7 | 20.8 |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | 39 | ---- | ---- | 5 | 15 |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | ---- | ---- | <1 | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | | 28 | ---- | ---- | <5 | 115 |
| Lead | 7439-92-1 | 5 | mg/kg | | 572 | ---- | ---- | 11 | 79 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | <2 | ---- | ---- | <2 | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | | 6 | ---- | ---- | 4 | 34 |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | ---- | ---- | <5 | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | ---- | ---- | <2 | <2 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT018_BH06_26041
9_0.2 | CPT018_BH06_26041
9_0.5 | CPT018_BH06_26041
9_2.0 | CPT018_BH06_26041
9_2.5 | CPT020_BH104_2604
19_0.2 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-001 | EM1906206-002 | EM1906206-005 | EM1906206-006 | EM1906206-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EG005(ED093)T: Total Metals by ICP-AES - Continued | | | | | | | | | |
| Tin | 7440-31-5 | 5 | mg/kg | 8 | ---- | ---- | ---- | <5 | 9 |
| Zinc | 7440-66-6 | 5 | mg/kg | 288 | ---- | ---- | ---- | <5 | 172 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | 0.1 | ---- | ---- | ---- | <0.1 | 0.4 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | 90 | ---- | ---- | ---- | 160 | 150 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | ---- | ---- | ---- | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | ---- | ---- | ---- | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | <0.2 | ---- | ---- | ---- | <0.2 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | <0.5 | ---- | ---- | ---- | <0.5 | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | <0.01 | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | ---- | ---- | ---- | <0.4 | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | <0.01 | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | <0.01 | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | <0.01 | <0.01 |



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(Matrix: SOIL) | | | | Client sample ID | CPT018_BH06_26041
9_0.2 | CPT018_BH06_26041
9_0.5 | CPT018_BH06_26041
9_2.0 | CPT018_BH06_26041
9_2.5 | CPT020_BH104_2604
19_0.2 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-001 | EM1906206-002 | EM1906206-005 | EM1906206-006 | EM1906206-007 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | ---- | ---- | ---- | <0.04 | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | <0.01 | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | <0.02 |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | <0.02 |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | ---- | ---- | ---- | <0.02 | <0.02 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | <0.01 | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | <0.01 | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | ---- | ---- | ---- | <0.01 | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | <0.03 |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | <0.03 |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | <0.03 |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | <0.05 | <0.05 |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | <0.05 | <0.05 |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | <0.03 |
| 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.05 | ---- | ---- | ---- | <0.05 | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | ---- | ---- | ---- | <0.2 | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | ---- | ---- | ---- | <0.03 | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | <1 |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | ---- | ---- | ---- | <1 | <1 |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | ---- | ---- | ---- | <5 | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | ---- | ---- | ---- | <5 | <5 |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | ---- | ---- | ---- | <5 | <5 |



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(Matrix: SOIL) | | | | Client sample ID | CPT018_BH06_26041
9_0.2 | CPT018_BH06_26041
9_0.5 | CPT018_BH06_26041
9_2.0 | CPT018_BH06_26041
9_2.5 | CPT020_BH104_2604
19_0.2 |
|---|-------------------|------|-------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-001 | EM1906206-002 | EM1906206-005 | EM1906206-006 | EM1906206-007 |
| | | | | | Result | Result | Result | Result | Result |
| EP075A: Phenolic Compounds (Non-halogenated) - Continued | | | | | | | | | |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | ---- | ---- | <5 | <5 |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | ---- | ---- | <5 | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | ---- | ---- | <1 | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | <0.5 |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | | 0.9 | ---- | ---- | 0.6 | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | | 0.9 | ---- | ---- | 0.6 | <0.5 |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | | 0.9 | ---- | ---- | <0.5 | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | | 0.6 | ---- | ---- | <0.5 | <0.5 |
| Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | <0.5 |
| Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | <0.5 |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | | <0.5 | ---- | ---- | <0.5 | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | | 3.3 | ---- | ---- | 1.2 | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | | 0.7 | ---- | ---- | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | | 1.0 | ---- | ---- | 0.6 | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | | 1.3 | ---- | ---- | 1.2 | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | | <0.03 | ---- | ---- | <0.03 | <0.03 |

| Client sampling date / time | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
|---|----------------------|------|-------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Compound | CAS Number | LOR | Unit | EM1906206-001 | EM1906206-002 | EM1906206-005 | EM1906206-006 | EM1906206-007 |
| | | | | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | <0.03 |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | ---- | ---- | <0.05 | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | <0.03 |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | ---- | ---- | <0.05 | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | <0.03 |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | ---- | ---- | <0.05 | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.05 | mg/kg | <0.05 | ---- | ---- | <0.05 | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | ---- | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | ---- | <10 | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | ---- | <50 | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | ---- | <10 | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | <100 | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | <100 | 190 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | ---- | <50 | 190 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | ---- | <50 | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | 100 | ---- | ---- | <100 | 220 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | ---- | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | 100 | ---- | ---- | <50 | 220 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | ---- | ---- | <50 | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | ---- | <10 | <10 |
| EP066S: PCB Surrogate | | | | | | | | |



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| | | | | | | | | | |
|--|------------|-------|------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT018_BH06_26041
9_0.2 | CPT018_BH06_26041
9_0.5 | CPT018_BH06_26041
9_2.0 | CPT018_BH06_26041
9_2.5 | CPT020_BH104_2604
19_0.2 |
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-001 | EM1906206-002 | EM1906206-005 | EM1906206-006 | EM1906206-007 |
| | | | | | Result | Result | Result | Result | Result |
| EP066S: PCB Surrogate - Continued | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | | 92.8 | ---- | ---- | 93.5 | 90.0 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | | 86.1 | ---- | ---- | 77.8 | 88.3 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | | 89.7 | ---- | ---- | 81.7 | 88.8 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | | 95.6 | ---- | ---- | 88.2 | 96.1 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | | 110 | ---- | ---- | 110 | 101 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | | 74.2 | ---- | ---- | 78.6 | 85.3 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | | 103 | ---- | ---- | 99.1 | 101 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | | 103 | ---- | ---- | 106 | 99.1 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | | 86.2 | ---- | ---- | 88.4 | 87.6 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | | 101 | ---- | ---- | 100 | 99.7 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | | 97.7 | ---- | ---- | 95.9 | 97.2 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | | 104 | ---- | ---- | 99.8 | 104 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | | | | |
|---|------------|-------|-------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | | CPT020_BH104_2604
19_0.5 | CPT020_BH104_2604
19_1.5 | CPT018_BH103_2604
19_0.2 | CPT018_BH103_2604
19_0.5 | CPT018_BH103_2604
19_1.0 |
| Client sampling date / time | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1906206-008 | EM1906206-010 | EM1906206-013 | EM1906206-014 | EM1906206-015 |
| | | | | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | ---- | 5.6 | 5.3 | ---- | 5.8 |
| EA033-A: Actual Acidity | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.3 | 5.3 | ---- | 5.0 | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 7 | 11 | ---- | 12 | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | ---- | <0.02 | ---- |
| EA033-B: Potential Acidity | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.013 | 0.006 | ---- | 0.010 | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | ---- | <10 | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | ---- | 1.5 | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.02 | 0.02 | ---- | 0.03 | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 15 | 15 | ---- | 18 | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | 1 | 1 | ---- | 1 | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.02 | 0.02 | ---- | 0.03 | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 15 | 15 | ---- | 18 | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 1 | 1 | ---- | 1 | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | ---- | 27.7 | 8.6 | ---- | 27.9 |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | ---- | 8 | 6 | ---- | 9 |
| Cadmium | 7440-43-9 | 1 | mg/kg | ---- | <1 | <1 | ---- | <1 |
| Copper | 7440-50-8 | 5 | mg/kg | ---- | <5 | 11 | ---- | <5 |
| Lead | 7439-92-1 | 5 | mg/kg | ---- | 11 | 18 | ---- | 8 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | ---- | <2 | <2 | ---- | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | ---- | 8 | 7 | ---- | 11 |
| Selenium | 7782-49-2 | 5 | mg/kg | ---- | <5 | <5 | ---- | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | ---- | <2 | <2 | ---- | <2 |
| Tin | 7440-31-5 | 5 | mg/kg | ---- | <5 | <5 | ---- | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | ---- | <5 | 34 | ---- | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | ---- | <0.1 | <0.1 | ---- | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT020_BH104_2604
19_0.5 | CPT020_BH104_2604
19_1.5 | CPT018_BH103_2604
19_0.2 | CPT018_BH103_2604
19_0.5 | CPT018_BH103_2604
19_1.0 |
|---|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-008 | EM1906206-010 | EM1906206-013 | EM1906206-014 | EM1906206-015 |
| | | | | Result | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | ---- | 250 | 140 | ---- | ---- | 290 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | ---- | <0.1 | <0.1 | <0.1 | ---- | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | ---- | <0.4 | <0.4 | <0.4 | ---- | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | ---- | <0.04 | <0.04 | <0.04 | ---- | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |



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(Matrix: SOIL) | | | | Client sample ID | CPT020_BH104_2604
19_0.5 | CPT020_BH104_2604
19_1.5 | CPT018_BH103_2604
19_0.2 | CPT018_BH103_2604
19_0.5 | CPT018_BH103_2604
19_1.0 |
|---|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-008 | EM1906206-010 | EM1906206-013 | EM1906206-014 | EM1906206-015 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- | <0.02 |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- | <0.01 |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | <1 |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | <0.5 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT020_BH104_2604
19_0.5 | CPT020_BH104_2604
19_1.5 | CPT018_BH103_2604
19_0.2 | CPT018_BH103_2604
19_0.5 | CPT018_BH103_2604
19_1.0 |
|--|-------------------|------|-------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1906206-008 | EM1906206-010 | EM1906206-013 | EM1906206-014 | EM1906206-015 |
| | | | | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | ---- | 0.6 | 0.6 | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | ---- | 1.2 | 1.2 | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| 4.4'-DDE | 72-55-9 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | ---- | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | ---- | <0.03 |
| 4.4'-DDD | 72-54-8 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | ---- | <0.05 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT020_BH104_2604
19_0.5 | CPT020_BH104_2604
19_1.5 | CPT018_BH103_2604
19_0.2 | CPT018_BH103_2604
19_0.5 | CPT018_BH103_2604
19_1.0 |
|--|--------------------------|-------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-008 | EM1906206-010 | EM1906206-013 | EM1906206-014 | EM1906206-015 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | ---- | <10 | <10 | <10 | ---- | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | ---- | <10 | <10 | <10 | ---- | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | <100 | ---- | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | <100 | ---- | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | ---- | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | ---- | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | <100 | ---- | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | <100 | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | ---- | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | ---- | <10 | <10 | <10 | ---- | <10 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | ---- | 87.4 | 105 | ---- | ---- | 94.9 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | ---- | 87.7 | 93.4 | ---- | ---- | 83.3 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | ---- | 89.1 | 80.3 | ---- | ---- | 80.5 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | ---- | 96.6 | 102 | ---- | ---- | 93.9 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | ---- | 101 | 112 | ---- | ---- | 102 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | ---- | 78.5 | 76.1 | ---- | ---- | 85.3 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT020_BH104_2604
19_0.5 | CPT020_BH104_2604
19_1.5 | CPT018_BH103_2604
19_0.2 | CPT018_BH103_2604
19_0.5 | CPT018_BH103_2604
19_1.0 |
|---|------------|-------|------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1906206-008 | EM1906206-010 | EM1906206-013 | EM1906206-014 | EM1906206-015 |
| | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | ---- | 89.3 | 103 | ---- | 102 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | ---- | 101 | 106 | ---- | 112 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | ---- | 82.7 | 89.2 | ---- | 87.3 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | ---- | 95.7 | 102 | ---- | 106 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | ---- | 92.2 | 98.7 | ---- | 100 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | ---- | 96.3 | 105 | ---- | 106 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT018_BH103_2604
19_1.5 | CPT020_BH105_2604
19_0.5 | CPT020_BH105_2604
19_1.5 | CPT021_BH106_2604
19_0.2 | CPT021_BH106_2604
19_0.5 |
|---|------------|-------|-------------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-016 | EM1906206-019 | EM1906206-021 | EM1906206-024 | EM1906206-025 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | ---- | 5.6 | 5.7 | 4.8 | ---- | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | 5.4 | 5.2 | 5.1 | ---- | 5.1 | 5.1 |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | 10 | 6 | 15 | ---- | 16 | 16 |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.02 | ---- | 0.02 | 0.02 |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.007 | 0.010 | 0.008 | ---- | 0.009 | 0.009 |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | <10 | ---- | <10 | <10 |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | 1.5 | 1.5 | 1.5 | ---- | 1.5 | 1.5 |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | 0.02 | <0.02 | 0.03 | ---- | 0.03 | 0.03 |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | 14 | 12 | 20 | ---- | 21 | 21 |
| Liming Rate | ---- | 1 | kg CaCO3/t | 1 | <1 | 2 | ---- | 2 | 2 |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | 0.02 | <0.02 | 0.03 | ---- | 0.03 | 0.03 |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | 14 | 12 | 20 | ---- | 21 | 21 |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | 1 | <1 | 2 | ---- | 2 | 2 |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | ---- | 14.1 | 30.0 | 4.4 | ---- | ---- |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | ---- | <5 | 8 | <5 | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | ---- | 13 | 8 | 8 | ---- | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | ---- | <2 | <2 | <2 | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | ---- | 5 | 10 | <2 | ---- | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | ---- | <2 | <2 | <2 | ---- | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | ---- | 5 | <5 | 8 | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | ---- | <0.1 | <0.1 | <0.1 | ---- | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT018_BH103_2604
19_1.5 | CPT020_BH105_2604
19_0.5 | CPT020_BH105_2604
19_1.5 | CPT021_BH106_2604
19_0.2 | CPT021_BH106_2604
19_0.5 |
|---|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-016 | EM1906206-019 | EM1906206-021 | EM1906206-024 | EM1906206-025 |
| | | | | Result | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | ---- | <1 | <1 | <1 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | ---- | 100 | 300 | 50 | | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | ---- | <0.1 | <0.1 | <0.1 | <0.1 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | <0.2 | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | ---- | <1 | <1 | <1 | <1 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | ---- | <0.4 | <0.4 | <0.4 | <0.4 | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | ---- | <0.04 | <0.04 | <0.04 | <0.04 | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | <0.01 | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | <0.02 | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | <0.02 | ---- |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT018_BH103_2604
19_1.5 | CPT020_BH105_2604
19_0.5 | CPT020_BH105_2604
19_1.5 | CPT021_BH106_2604
19_0.2 | CPT021_BH106_2604
19_0.5 |
|---|-------------------|------|-------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1906206-016 | EM1906206-019 | EM1906206-021 | EM1906206-024 | EM1906206-025 |
| | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | ---- | <0.02 | <0.02 | <0.02 | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | ---- | <0.01 | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | ---- | <0.2 | <0.2 | <0.2 | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | ---- | <5 | <5 | <5 | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | ---- | <1 | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT018_BH103_2604
19_1.5 | CPT020_BH105_2604
19_0.5 | CPT020_BH105_2604
19_1.5 | CPT021_BH106_2604
19_0.2 | CPT021_BH106_2604
19_0.5 |
|--|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-016 | EM1906206-019 | EM1906206-021 | EM1906206-024 | EM1906206-025 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Anthracene | 120-12-7 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Pyrene | 129-00-0 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Chrysene | 218-01-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | ---- | <0.5 | <0.5 | <0.5 | <0.5 | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | ---- | 0.6 | 0.6 | 0.6 | 0.6 | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | ---- | 1.2 | 1.2 | 1.2 | 1.2 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Aldrin | 309-00-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| 4.4'-DDE | 72-55-9 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Endrin | 72-20-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| 4.4'-DDD | 72-54-8 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | <0.05 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT018_BH103_2604
19_1.5 | CPT020_BH105_2604
19_0.5 | CPT020_BH105_2604
19_1.5 | CPT021_BH106_2604
19_0.2 | CPT021_BH106_2604
19_0.5 |
|--|--------------------------|-------|-------|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-016 | EM1906206-019 | EM1906206-021 | EM1906206-024 | EM1906206-025 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075I: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | ---- | <0.05 | <0.05 | <0.05 | <0.05 | ---- |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | ---- | <0.03 | <0.03 | <0.03 | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | ---- | <10 | <10 | <10 | <10 | ---- |
| C10 - C14 Fraction | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | <50 | ---- |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | ---- | <10 | <10 | <10 | <10 | ---- |
| C15 - C28 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | <100 | <100 | ---- |
| C29 - C36 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | <100 | <100 | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | <50 | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | <50 | ---- |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | <100 | <100 | ---- |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | ---- | <100 | <100 | <100 | <100 | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | <50 | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | ---- | <50 | <50 | <50 | <50 | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | ---- | <10 | <10 | <10 | <10 | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | ---- | 93.2 | 106 | 89.3 | 89.3 | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | ---- | 97.8 | 86.0 | 86.3 | 86.3 | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | ---- | 89.5 | 87.8 | 84.8 | 84.8 | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | ---- | 104 | 96.6 | 92.2 | 92.2 | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | ---- | 97.9 | 109 | 108 | 108 | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | ---- | 82.7 | 75.1 | 80.8 | 80.8 | ---- |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

| | | | | CPT018_BH103_2604
19_1.5 | CPT020_BH105_2604
19_0.5 | CPT020_BH105_2604
19_1.5 | CPT021_BH106_2604
19_0.2 | CPT021_BH106_2604
19_0.5 |
|---|------------|-------|------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Client sampling date / time | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | EM1906206-016 | EM1906206-019 | EM1906206-021 | EM1906206-024 | EM1906206-025 |
| | | | | Result | Result | Result | Result | Result |
| EP075S: Acid Extractable Surrogates (Waste Classification) - Continued | | | | | | | | |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | ---- | 98.9 | 94.5 | 101 | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | ---- | 95.7 | 106 | 102 | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | ---- | 83.6 | 82.6 | 86.9 | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | ---- | 99.4 | 97.7 | 101 | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | ---- | 96.0 | 94.6 | 96.6 | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | ---- | 101 | 98.0 | 102 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT021_BH106_2604
19_1.0 | CPT021_BH106_2604
19_1.5 | QC157_260419 | QC158_260419 | QC566_260419 |
|---|------------|-------|-------------|------------------|-----------------------------|-----------------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-026 | EM1906206-027 | EM1906206-030 | EM1906206-031 | EM1906206-034 |
| | | | | Result | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | | 5.9 | ---- | 5.6 | 5.8 | ---- |
| EA033-A: Actual Acidity | | | | | | | | | |
| pH KCl (23A) | ---- | 0.1 | pH Unit | | ---- | 5.2 | ---- | ---- | ---- |
| Titrateable Actual Acidity (23F) | ---- | 2 | mole H+ / t | | ---- | 10 | ---- | ---- | ---- |
| sulfidic - Titrateable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | | ---- | <0.02 | ---- | ---- | ---- |
| EA033-B: Potential Acidity | | | | | | | | | |
| Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | | ---- | 0.006 | ---- | ---- | ---- |
| acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | | ---- | <10 | ---- | ---- | ---- |
| EA033-E: Acid Base Accounting | | | | | | | | | |
| ANC Fineness Factor | ---- | 0.5 | - | | ---- | 1.5 | ---- | ---- | ---- |
| Net Acidity (sulfur units) | ---- | 0.02 | % S | | ---- | 0.02 | ---- | ---- | ---- |
| Net Acidity (acidity units) | ---- | 10 | mole H+ / t | | ---- | 14 | ---- | ---- | ---- |
| Liming Rate | ---- | 1 | kg CaCO3/t | | ---- | 1 | ---- | ---- | ---- |
| Net Acidity excluding ANC (sulfur units) | ---- | 0.02 | % S | | ---- | 0.02 | ---- | ---- | ---- |
| Net Acidity excluding ANC (acidity units) | ---- | 10 | mole H+ / t | | ---- | 14 | ---- | ---- | ---- |
| Liming Rate excluding ANC | ---- | 1 | kg CaCO3/t | | ---- | 1 | ---- | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | 18.3 | ---- | 26.3 | 20.4 | <1.0 |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | | 5 | ---- | 7 | <5 | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | | 8 | ---- | 8 | 6 | ---- |
| Molybdenum | 7439-98-7 | 2 | mg/kg | | 4 | ---- | <2 | <2 | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | | 6 | ---- | 8 | 4 | ---- |
| Selenium | 7782-49-2 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| Silver | 7440-22-4 | 2 | mg/kg | | <2 | ---- | <2 | <2 | ---- |
| Tin | 7440-31-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | <0.1 | ---- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT021_BH106_2604
19_1.0 | CPT021_BH106_2604
19_1.5 | QC157_260419 | QC158_260419 | QC566_260419 |
|---|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-026 | EM1906206-027 | EM1906206-030 | EM1906206-031 | EM1906206-034 |
| | | | | | Result | Result | Result | Result | Result |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| EK040T: Fluoride Total | | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | | 200 | ---- | 300 | 200 | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | | <0.1 | ---- | <0.1 | <0.1 | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Styrene | 100-42-5 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| EP074H: Naphthalene | | | | | | | | | |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | | <0.4 | ---- | <0.4 | <0.4 | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| Chloroform | 67-66-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | | <0.04 | ---- | <0.04 | <0.04 | ---- |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT021_BH106_2604
19_1.0 | CPT021_BH106_2604
19_1.5 | QC157_260419 | QC158_260419 | QC566_260419 |
|---|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-026 | EM1906206-027 | EM1906206-030 | EM1906206-031 | EM1906206-034 |
| | | | | | Result | Result | Result | Result | Result |
| EP074I: Volatile Halogenated Compounds - Continued | | | | | | | | | |
| 1.4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1.2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | | <0.02 | ---- | <0.02 | <0.02 | ---- |
| 1.2.4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | | <0.01 | ---- | <0.01 | <0.01 | ---- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | |
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.4.5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| 2.4.6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| 2.3.5.6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| 2.3.4.5 &
2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | | <0.05 | ---- | <0.05 | <0.05 | ---- |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | | <0.2 | ---- | <0.2 | <0.2 | ---- |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | | <0.03 | ---- | <0.03 | <0.03 | ---- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | |
| Phenol | 108-95-2 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 2.4-Dimethylphenol | 105-67-9 | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| 2.4-Dinitrophenol | 51-28-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| Dinoseb | 88-85-7 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | | <5 | ---- | <5 | <5 | ---- |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | | <1 | ---- | <1 | <1 | ---- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |
| Fluorene | 86-73-7 | 0.5 | mg/kg | | <0.5 | ---- | <0.5 | <0.5 | ---- |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT021_BH106_2604
19_1.0 | CPT021_BH106_2604
19_1.5 | QC157_260419 | QC158_260419 | QC566_260419 |
|--|-------------------|------|-------|------------------|-----------------------------|-----------------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-026 | EM1906206-027 | EM1906206-030 | EM1906206-031 | EM1906206-034 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(b+j) &
Benzo(k)fluoranthene | 205-99-2 207-08-9 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | 0.6 | ---- | 0.6 | 0.6 | ---- | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | 1.2 | ---- | 1.2 | 1.2 | ---- | 1.2 |
| EP075I: Organochlorine Pesticides | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | 0.08 | ---- | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | <0.05 | ---- | <0.05 |



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| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT021_BH106_2604
19_1.0 | CPT021_BH106_2604
19_1.5 | QC157_260419 | QC158_260419 | QC566_260419 |
|--|--------------------------|------|-------|------------------|-----------------------------|-----------------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-026 | EM1906206-027 | EM1906206-030 | EM1906206-031 | EM1906206-034 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP0751: Organochlorine Pesticides - Continued | | | | | | | | | |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | 0.14 | ---- | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | 0.22 | ---- | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/5
0-2 | 0.05 | mg/kg | <0.05 | ---- | <0.05 | 0.22 | ---- | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | ---- | <0.03 | <0.03 | ---- | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | <10 | <10 | ---- | <10 |
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | ---- | <10 | <10 | ---- | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | <10 | <10 | ---- | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | ---- | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | ---- | <100 |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | ---- | <50 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | ---- | <10 | <10 | ---- | <10 |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | <10 | <10 | ---- | <10 |
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | ---- | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | ---- | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | ---- | <100 | <100 | ---- | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | ---- | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | ---- | <50 | <50 | ---- | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | ---- | <10 | <10 | ---- | <10 |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | ---- | <0.2 | <0.2 | ---- | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | <0.5 | ---- | <0.5 | <0.5 | ---- | <0.5 |



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|--|------------|-------|-------|------------------|-----------------------------|-----------------------------|-------------------|-------------------|-------------------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT021_BH106_2604
19_1.0 | CPT021_BH106_2604
19_1.5 | QC157_260419 | QC158_260419 | QC566_260419 |
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1906206-026 | EM1906206-027 | EM1906206-030 | EM1906206-031 | EM1906206-034 |
| | | | | Result | Result | Result | Result | Result | Result |
| EP080: BTEXN - Continued | | | | | | | | | |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | ---- | ---- | ---- | ---- | ---- | <0.5 |
| ^ Sum of BTEX | ---- | 0.2 | mg/kg | ---- | ---- | ---- | ---- | ---- | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | ---- | ---- | ---- | ---- | ---- | <0.5 |
| Naphthalene | 91-20-3 | 1 | mg/kg | ---- | ---- | ---- | ---- | ---- | <1 |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 103 | ---- | 102 | 104 | ---- | ---- |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 92.6 | ---- | 59.9 | 67.7 | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 89.0 | ---- | 60.5 | 62.9 | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 99.8 | ---- | 68.3 | 74.3 | ---- | ---- |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 132 | ---- | 125 | 110 | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 92.7 | ---- | 92.8 | 93.2 | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 114 | ---- | 114 | 117 | ---- | ---- |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 113 | ---- | 122 | 117 | ---- | ---- |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 103 | ---- | 104 | 104 | ---- | ---- |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 115 | ---- | 119 | 120 | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 112 | ---- | 115 | 117 | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 117 | ---- | 123 | 118 | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.2 | % | ---- | ---- | ---- | ---- | ---- | 78.6 |
| Toluene-D8 | 2037-26-5 | 0.2 | % | ---- | ---- | ---- | ---- | ---- | 77.2 |
| 4-Bromofluorobenzene | 460-00-4 | 0.2 | % | ---- | ---- | ---- | ---- | ---- | 87.5 |



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|---|-------------------|-----|-------|------------------|-------------------|-------------------|-------------------|-------|-------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | QC567_260419 | QC568_260419 | QC569_260419 | ---- | ---- |
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1906206-035 | EM1906206-036 | EM1906206-037 | ----- | ----- |
| | | | | Result | Result | Result | Result | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | | <1.0 | <1.0 | <1.0 | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 10 | mg/kg | | <10 | <10 | <10 | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | | <10 | <10 | <10 | ---- | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | | <10 | <10 | <10 | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | ---- | ---- |
| Toluene | 108-88-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| ^ Sum of BTEX | ---- | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | ---- | ---- |
| Naphthalene | 91-20-3 | 1 | mg/kg | | <1 | <1 | <1 | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.2 | % | | 76.2 | 110 | 82.2 | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.2 | % | | 74.2 | 111 | 80.4 | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.2 | % | | 85.5 | 125 | 94.1 | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC358_260419 | QC458_260419 | ---- | ---- | ---- |
|---|----------------------|-----|------|------------------|-------------------|-------------------|-------|-------|-------|
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1906206-032 | EM1906206-033 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | ---- | ---- | ---- | ---- | ---- |
| EP068A: Organochlorine Pesticides (OC) | | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| alpha-Endosulfan | 959-98-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| beta-Endosulfan | 33213-65-9 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| 4,4'-DDT | 50-29-3 | 2.0 | µg/L | <2.0 | ---- | ---- | ---- | ---- | ---- |
| Endrin ketone | 53494-70-5 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 2.0 | µg/L | <2.0 | ---- | ---- | ---- | ---- | ---- |
| ^ Total Chlordane (sum) | ---- | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.5 | µg/L | <0.5 | ---- | ---- | ---- | ---- | ---- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | |
| Styrene | 100-42-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | | | |
| Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | ---- | ---- | ---- | ---- | ---- |
| 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| Methylene chloride | 75-09-2 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |
| trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | ---- | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC358_260419 | QC458_260419 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1906206-032 | EM1906206-033 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP074E: Halogenated Aliphatic Compounds - Continued | | | | | | | | | |
| cis-1,2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,1,1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| Trichloroethene | 79-01-6 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,1,2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| EP074F: Halogenated Aromatic Compounds | | | | | | | | | |
| Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| 1,2,4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| EP074G: Trihalomethanes | | | | | | | | | |
| Chloroform | 67-66-3 | 5 | µg/L | <5 | | ---- | ---- | ---- | ---- |
| EP075(SIM)A: Phenolic Compounds | | | | | | | | | |
| Phenol | 108-95-2 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| 2-Chlorophenol | 95-57-8 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| 2-Methylphenol | 95-48-7 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| 3- & 4-Methylphenol | 1319-77-3 | 2.0 | µg/L | <2.0 | | ---- | ---- | ---- | ---- |
| 2-Nitrophenol | 88-75-5 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| 2,4-Dimethylphenol | 105-67-9 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| 2,4-Dichlorophenol | 120-83-2 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| 2,6-Dichlorophenol | 87-65-0 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| 4-Chloro-3-methylphenol | 59-50-7 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| 2,4,6-Trichlorophenol | 88-06-2 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| 2,4,5-Trichlorophenol | 95-95-4 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Pentachlorophenol | 87-86-5 | 2.0 | µg/L | <2.0 | | ---- | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 1.0 | µg/L | <1.0 | | ---- | ---- | ---- | ---- |



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| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC358_260419 | QC458_260419 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1906206-032 | EM1906206-033 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| Fluorene | 86-73-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benz(a)anthracene | 56-55-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Dibenz(a.h)anthracene | 53-70-3 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| Benzo(g.h.i)perylene | 191-24-2 | 1.0 | µg/L | | <1.0 | ---- | ---- | ---- | ---- |
| ^ Sum of polycyclic aromatic hydrocarbons | | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | | 0.5 | µg/L | | <0.5 | ---- | ---- | ---- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | | 20 | µg/L | | <20 | <20 | ---- | ---- | ---- |
| C10 - C14 Fraction | | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| C15 - C28 Fraction | | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| C29 - C36 Fraction | | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | | 50 | µg/L | | <50 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| C6 - C10 Fraction | | C6_C10 | 20 | µg/L | <20 | <20 | ---- | ---- | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | | C6_C10-BTEX | 20 | µg/L | <20 | <20 | ---- | ---- | ---- |
| >C10 - C16 Fraction | | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C16 - C34 Fraction | | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| >C34 - C40 Fraction | | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | | 100 | µg/L | | <100 | ---- | ---- | ---- | ---- |
| EP080: BTEXN | | | | | | | | | |
| Benzene | | 71-43-2 | 1 | µg/L | <1 | <1 | ---- | ---- | ---- |
| Toluene | | 108-88-3 | 2 | µg/L | <2 | <2 | ---- | ---- | ---- |
| Ethylbenzene | | 100-41-4 | 2 | µg/L | <2 | <2 | ---- | ---- | ---- |



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|---|-------------------|-----|------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: WATER
(Matrix: WATER) | | | | Client sample ID | QC358_260419 | QC458_260419 | ---- | ---- | ---- |
| Client sampling date / time | | | | | 26-Apr-2019 00:00 | 26-Apr-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1906206-032 | EM1906206-033 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EP080: BTEXN - Continued | | | | | | | | | |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| ^ Total Xylenes | ---- | 2 | µg/L | | <2 | <2 | ---- | ---- | ---- |
| ^ Sum of BTEX | ---- | 1 | µg/L | | <1 | <1 | ---- | ---- | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | | <5 | <5 | ---- | ---- | ---- |
| EP066S: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 1 | % | | 83.6 | ---- | ---- | ---- | ---- |
| EP068S: Organochlorine Pesticide Surrogate | | | | | | | | | |
| Dibromo-DDE | 21655-73-2 | 0.5 | % | | 77.9 | ---- | ---- | ---- | ---- |
| EP068T: Organophosphorus Pesticide Surrogate | | | | | | | | | |
| DEF | 78-48-8 | 0.5 | % | | 73.9 | ---- | ---- | ---- | ---- |
| EP074S: VOC Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 5 | % | | 108 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 5 | % | | 104 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 5 | % | | 106 | ---- | ---- | ---- | ---- |
| EP075(SIM)S: Phenolic Compound Surrogates | | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 1.0 | % | | 28.7 | ---- | ---- | ---- | ---- |
| 2-Chlorophenol-D4 | 93951-73-6 | 1.0 | % | | 60.0 | ---- | ---- | ---- | ---- |
| 2,4,6-Tribromophenol | 118-79-6 | 1.0 | % | | 77.3 | ---- | ---- | ---- | ---- |
| EP075(SIM)T: PAH Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 1.0 | % | | 84.6 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 1.0 | % | | 81.8 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 1.0 | % | | 80.9 | ---- | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | | 100 | 98.7 | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | | 107 | 102 | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | | 123 | 117 | ---- | ---- | ---- |



□□ □ □□□□□ □□ □□

| Sub-Matrix: SOIL | | □□□□ □□□ □ s □ | |
|---|------------|----------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 51 | 125 |
| Toluene-D8 | 2037-26-5 | 55 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 56 | 124 |

| Sub-Matrix: WATER | | □□□□ □□□ □ s □ | |
|---|------------|----------------|------|
| Compound | CAS Number | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 125 |
| EP068S: Organochlorine Pesticide Surrogate | | | |
| Dibromo-DDE | 21655-73-2 | 49 | 117 |
| EP068T: Organophosphorus Pesticide Surrogate | | | |
| DEF | 78-48-8 | 51 | 127 |
| EP074S: VOC Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 72 | 132 |
| Toluene-D8 | 2037-26-5 | 77 | 132 |
| 4-Bromofluorobenzene | 460-00-4 | 67 | 131 |
| EP075(SIM)S: Phenolic Compound Surrogates | | | |
| Phenol-d6 | 13127-88-3 | 10 | 46 |
| 2-Chlorophenol-D4 | 93951-73-6 | 23 | 104 |
| 2,4,6-Tribromophenol | 118-79-6 | 28 | 130 |
| EP075(SIM)T: PAH Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 36 | 114 |



| | | | |
|---|------------|------------------|------|
| Sub-Matrix: WATER | | □□□□□ □□□□ □ s □ | |
| Compound | CAS Number | □□% | □□ □ |
| EP075(SIM)T: PAH Surrogates - Continued | | | |
| Anthracene-d10 | 1719-06-8 | 51 | 119 |
| 4-Terphenyl-d14 | 1718-51-0 | 49 | 127 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM1906206 | Page | : 1 of 26 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 26-Apr-2019 17:30 |
| Order number | : ---- | Date Analysed | : 26-Apr-2019 |
| C-O-C number | : ---- | Date Issued | : 03-May-2019 10:48 |
| No. of samples received | : 37 | | |
| No. of samples analysed | : 25 | Quote number | : EN/096/18 |

General Comments

This guideline comparison report **only** provides comparison of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702 and measurement uncertainty.

This guideline comparison report only provides comparison data for parameters, specifically listed within the IWRG621 (2009) guideline, that are analysed by ALS.

Red shading is applied where the result is equal to or greater than the guideline upper limit and/or equal to or lower than the guideline lower limit. Any shading applied **does not** take into account measurement uncertainty. Where a result is required to meet compliance limits, the associated uncertainty **must be** considered. Refer to the ALS Contract [Terms and Conditions](#) for details, and EnviroMail 53 for a guide on how to interpret the measurement uncertainty (MU).

Only results in the 'Analytical Results' section have been compared to the guideline.

Additional information pertinent to this report will be found in the following separate attachments: Certificate of Analysis, Quality Control Report, QA/QC Compliance Assessment to Assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| Client Sample ID | ALS Sample ID | Compound | Method | LOR | Limits | Result |
|------------------------|---------------|----------|--------|-----|-------------|-----------|
| CPT018_BH06_260419_02 | EM1906206-001 | Arsenic | EG005T | 5 | < 20 mg/kg | 39 mg/kg |
| CPT018_BH06_260419_02 | EM1906206-001 | Lead | EG005T | 5 | < 300 mg/kg | 572 mg/kg |
| CPT018_BH06_260419_02 | EM1906206-001 | Zinc | EG005T | 5 | < 200 mg/kg | 288 mg/kg |
| CPT020_BH104_260419_02 | EM1906206-007 | Copper | EG005T | 5 | < 100 mg/kg | 115 mg/kg |



Analytical Results

Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT018_BH06
_260419_0.2 | CPT018_BH06
_260419_0.5 | CPT018_BH06
_260419_2.0 | CPT018_BH06
_260419_2.5 | CPT020_BH10
4_260419_0.2 | | |
|--|--------------|------|---------|--------------------|--------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|---------|---------|
| | | | | Sampling date/time | | | | | | | □□□□ □□ | □□□□ □□ |
| | | | | □□ □□ | □□□□ | | | | | | | |
| Compound | Method | LOR | Unit | □□ □ | □□ □ | EM1906206-001 MU | EM1906206-002 MU | EM1906206-005 MU | EM1906206-006 MU | EM1906206-007 MU | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.5 ± 0.1 | ---- | ---- | 5.7 ± 0.1 | 5.6 ± 0.1 | | |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 39 ± 5 | ---- | ---- | 5 ± 2 | 15 ± 3 | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 -- | ---- | ---- | <1 -- | <1 -- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 28 ± 3 | ---- | ---- | <5 -- | 115 ± 14 | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 572 ± 60 | ---- | ---- | 11 ± 1 | 79 ± 8 | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 -- | ---- | ---- | <2 -- | <2 -- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 6 ± 0.7 | ---- | ---- | 4 ± 0.4 | 34 ± 3 | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 -- | ---- | ---- | <5 -- | <5 -- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 -- | ---- | ---- | <2 -- | <2 -- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 288 ± 30 | ---- | ---- | <5 -- | 172 ± 18 | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | 0.1 ± 0.01 | ---- | ---- | <0.1 -- | 0.4 ± 0.04 | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 -- | ---- | ---- | <0.5 -- | <0.5 -- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | ---- | ---- | <1 | <1 | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 90 ± 30 | ---- | ---- | 160 ± 40 | 150 ± 40 | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | ---- | ---- | <0.2 | <0.2 | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 -- | ---- | ---- | <0.2 -- | <0.2 -- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | ---- | ---- | <0.02 | <0.02 | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | ---- | ---- | <0.02 | <0.02 | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 -- | ---- | ---- | <0.01 -- | <0.01 -- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 -- | ---- | ---- | <0.03 -- | <0.03 -- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 -- | ---- | ---- | <1 -- | <1 | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT018_BH06
_260419_0.2 | CPT018_BH06
_260419_0.5 | CPT018_BH06
_260419_2.0 | CPT018_BH06
_260419_2.5 | CPT020_BH10
4_260419_0.2 |
|--|--------------|------|-------|--------------------|---------------|---------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 |
| Compound | Method | LOR | Unit | | □□□□
□□□ □ | □□□□
□□□ □ | EM1906206-001 MU | EM1906206-002 MU | EM1906206-005 MU | EM1906206-006 MU | EM1906206-007 MU |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | | 0.6 ± 0.1 | ---- | ---- | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | | 3.3 ± 1.2 | ---- | ---- | 1.2 ± 0.4 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | | <0.05 | ---- | ---- | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | | <10 | ---- | ---- | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | | <50 | ---- | ---- | <50 | 190 ± 30 |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | Sampling date/time | | CPT018_BH06_260419_0.2 | | CPT018_BH06_260419_0.5 | | CPT018_BH06_260419_2.0 | | CPT018_BH06_260419_2.5 | | CPT020_BH10_4_260419_0.2 | |
|--|--|--|--|------------------|--|--------------------|--|------------------------|--|------------------------|--|------------------------|--|------------------------|--|--------------------------|--|
| | | | | □□□□ □□ | | □□□□ □□ | | 26-Apr-2019
15:00 | | 26-Apr-2019
15:00 | | 26-Apr-2019
15:00 | | 26-Apr-2019
15:00 | | 26-Apr-2019
15:00 | |
| | | | | □□ □□
□□ □ | | □□□□
□□ □ | | EM1906206-001 MU | | EM1906206-002 MU | | EM1906206-005 MU | | EM1906206-006 MU | | EM1906206-007 MU | |
| Compound | | | | Method | | LOR | | Unit | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | | | | | |
| pH (CaCl2) | | | | EA001 | | 0.1 | | pH Unit | | 4 | | 9 | | 5.5 ± 0.1 | | 5.6 ± 0.1 | |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | | | | | | | | |
| Arsenic | | | | EG005T | | 5 | | mg/kg | | ---- | | 500 | | 39 ± 5 | | 15 ± 3 | |
| Cadmium | | | | EG005T | | 1 | | mg/kg | | ---- | | 100 | | <1 .. | | <1 .. | |
| Copper | | | | EG005T | | 5 | | mg/kg | | ---- | | 5000 | | 28 ± 3 | | 115 ± 14 | |
| Lead | | | | EG005T | | 5 | | mg/kg | | ---- | | 1500 | | 572 ± 60 | | 79 ± 8 | |
| Molybdenum | | | | EG005T | | 2 | | mg/kg | | ---- | | 1000 | | <2 .. | | <2 .. | |
| Nickel | | | | EG005T | | 2 | | mg/kg | | ---- | | 3000 | | 6 ± 0.7 | | 34 ± 3 | |
| Selenium | | | | EG005T | | 5 | | mg/kg | | ---- | | 50 | | <5 .. | | <5 .. | |
| Silver | | | | EG005T | | 2 | | mg/kg | | ---- | | 180 | | <2 .. | | <2 .. | |
| Tin | | | | EG005T | | 5 | | mg/kg | | ---- | | 500 | | 8 ± 3 | | 9 ± 3 | |
| Zinc | | | | EG005T | | 5 | | mg/kg | | ---- | | 35000 | | 288 ± 30 | | 172 ± 18 | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | | | | | |
| Mercury | | | | EG035T | | 0.1 | | mg/kg | | ---- | | 75 | | 0.1 ± 0.01 | | 0.4 ± 0.04 | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | | | | | |
| Hexavalent Chromium | | | | EG048G | | 0.5 | | mg/kg | | ---- | | 500 | | <0.5 .. | | <0.5 .. | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | | | | | |
| Total Cyanide | | | | EK026SF | | 1 | | mg/kg | | ---- | | 2500 | | <1 | | <1 | |
| EK040T: Fluoride Total | | | | | | | | | | | | | | | | | |
| Fluoride | | | | EK040T | | 40 | | mg/kg | | ---- | | 10000 | | 90 ± 30 | | 150 ± 40 | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | | | |
| Benzene | | | | EP074-UT | | 0.2 | | mg/kg | | ---- | | 4 | | <0.2 | | <0.2 | |
| Sum of monocyclic aromatic hydrocarbons | | | | EP074-UT-SUM | | 0.2 | | mg/kg | | ---- | | 70 | | <0.2 .. | | <0.2 .. | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | | | | | |
| Vinyl chloride | | | | EP074-UT | | 0.02 | | mg/kg | | ---- | | 1.2 | | <0.02 | | <0.02 | |
| Hexachlorobutadiene | | | | EP074-UT | | 0.02 | | mg/kg | | ---- | | 2.8 | | <0.02 | | <0.02 | |
| Sum of other chlorinated hydrocarbons | | | | EP074-UT-SUM | | 0.01 | | mg/kg | | ---- | | 10 | | <0.01 .. | | <0.01 .. | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | | | | EP075-EM-SUM | | 0.03 | | mg/kg | | ---- | | 10 | | <0.03 .. | | <0.03 .. | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | | | | EP075-EM-SUM | | 1 | | mg/kg | | ---- | | 560 | | <1 .. | | <1 .. | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT018_BH06
_260419_0.2 | CPT018_BH06
_260419_0.5 | CPT018_BH06
_260419_2.0 | CPT018_BH06
_260419_2.5 | CPT020_BH10
4_260419_0.2 |
|--|--------------|------|-------|--------------------|---------|---------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 |
| Compound | Method | LOR | Unit | | □□□ □ | □□□□ | EM1906206-001 MU | EM1906206-002 MU | EM1906206-005 MU | EM1906206-006 MU | EM1906206-007 MU |
| | | | | | □□ □ | □□ □ | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | | 0.6 ± 0.1 | ---- | ---- | <0.5 | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | | 3.3 ± 1.2 | ---- | ---- | 1.2 ± 0.4 | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | | <0.05 | ---- | ---- | <0.05 | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | | <0.03 | ---- | ---- | <0.03 | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | | <10 | ---- | ---- | <10 | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | | <50 | ---- | ---- | <50 | 190 ± 30 |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| | | | | | | | | | | | | |
|--|--------------|------|---------|--------------------|-----------------|------------|---------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT018_BH06
_260419_0.2 | CPT018_BH06
_260419_0.5 | CPT018_BH06
_260419_2.0 | CPT018_BH06
_260419_2.5 | CPT020_BH10
4_260419_0.2 |
| | | | | Sampling date/time | | | | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 |
| | | | | □□□ □□
□□□ □□ | □□□□□
□□□ □□ | | | EM1906206-001 MU | EM1906206-002 MU | EM1906206-005 MU | EM1906206-006 MU | EM1906206-007 MU |
| Compound | Method | LOR | Unit | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.5 ± 0.1 | ---- | ---- | 5.7 ± 0.1 | 5.6 ± 0.1 | | |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | 39 ± 5 | ---- | ---- | 5 ± 2 | 15 ± 3 | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 .. | ---- | ---- | <1 .. | <1 .. | | |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 28 ± 3 | ---- | ---- | <5 .. | 115 ± 14 | | |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 572 ± 60 | ---- | ---- | 11 ± 1 | 79 ± 8 | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 .. | ---- | ---- | <2 .. | <2 .. | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 6 ± 0.7 | ---- | ---- | 4 ± 0.4 | 34 ± 3 | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 .. | ---- | ---- | <5 .. | <5 .. | | |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 .. | ---- | ---- | <2 .. | <2 .. | | |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | 8 ± 3 | ---- | ---- | <5 .. | 9 ± 3 | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 288 ± 30 | ---- | ---- | <5 .. | 172 ± 18 | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | 0.1 ± 0.01 | ---- | ---- | <0.1 .. | 0.4 ± 0.04 | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 .. | ---- | ---- | <0.5 .. | <0.5 .. | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 | ---- | ---- | <1 | <1 | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 90 ± 30 | ---- | ---- | 160 ± 40 | 150 ± 40 | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 .. | ---- | ---- | <0.1 .. | <0.1 .. | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | ---- | ---- | <0.2 | <0.2 | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 .. | ---- | ---- | <0.2 .. | <0.2 .. | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 .. | ---- | ---- | <0.01 .. | <0.01 .. | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 .. | ---- | ---- | <0.03 .. | <0.03 .. | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 .. | ---- | ---- | <1 .. | <1 .. | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT018_BH06 | | CPT018_BH06 | | CPT018_BH06 | | CPT018_BH06 | | CPT020_BH10 | |
|---|--------------|------|-------|------------------|---------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-------------|--|--------------|--|
| | | | | | | _260419_0.2 | | _260419_0.5 | | _260419_2.0 | | _260419_2.5 | | 4_260419_0.2 | |
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | | | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □□ | □□□□
□□ □□ | EM1906206-001 MU | EM1906206-002 MU | EM1906206-005 MU | EM1906206-006 MU | EM1906206-007 MU | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | 0.6 ± 0.1 | ---- | ---- | <0.5 -- | <0.5 -- | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | 3.3 ± 1.2 | ---- | ---- | 1.2 ± 0.4 | <0.5 -- | | | | | |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 -- | ---- | ---- | <0.03 -- | <0.03 -- | | | | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 | ---- | ---- | <10 | <10 | | | | | |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | <50 -- | ---- | ---- | <50 -- | 190 ± 30 | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | Sampling date/time | | CPT020_BH10
4_260419_0.5 | CPT020_BH10
4_260419_1.5 | CPT018_BH10
3_260419_0.2 | CPT018_BH10
3_260419_0.5 | CPT018_BH10
3_260419_1.0 |
|---|--------------|------|---------|------------------|--------|--------------------|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | | | | | | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 |
| | | | | | | | | EM1906206-008 MU | EM1906206-010 MU | EM1906206-013 MU | EM1906206-014 MU | EM1906206-015 MU |
| Compound | Method | LOR | Unit | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | ---- | | 5.6 ± 0.1 | 5.3 ± 0.1 | ---- | | 5.8 ± 0.1 |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | ---- | | 8 ± 2 | 6 ± 2 | ---- | | 9 ± 2 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | ---- | | <1 .. | <1 .. | ---- | | <1 .. |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | ---- | | <5 .. | 11 ± 1 | ---- | | <5 .. |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | ---- | | 11 ± 2 | 18 ± 2 | ---- | | 8 ± 1 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | ---- | | <2 .. | <2 .. | ---- | | <2 .. |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | ---- | | 8 ± 0.8 | 7 ± 0.8 | ---- | | 11 ± 1 |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | ---- | | <5 .. | <5 .. | ---- | | <5 .. |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | ---- | | <2 .. | <2 .. | ---- | | <2 .. |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | ---- | | <5 .. | 34 ± 5 | ---- | | <5 .. |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | ---- | | <0.1 .. | <0.1 .. | ---- | | <0.1 .. |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | ---- | | <0.5 .. | <0.5 .. | ---- | | <0.5 .. |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | ---- | | <1 | <1 | ---- | | <1 |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | ---- | | 250 ± 50 | 140 ± 40 | ---- | | 290 ± 50 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | ---- | | <0.2 | <0.2 | ---- | | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | ---- | | <0.2 .. | <0.2 .. | ---- | | <0.2 .. |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | ---- | | <0.02 | <0.02 | ---- | | <0.02 |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | ---- | | <0.02 | <0.02 | ---- | | <0.02 |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | ---- | | <0.01 .. | <0.01 .. | ---- | | <0.01 .. |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | ---- | | <0.03 .. | <0.03 .. | ---- | | <0.03 .. |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | ---- | | <1 .. | <1 .. | ---- | | <1 .. |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | ---- | | <0.5 .. | <0.5 .. | ---- | | <0.5 .. |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| Sub-Matrix: SOIL | | | | Client sample ID | | Sampling date/time | | CPT020_BH10
4_260419_0.5 | | CPT020_BH10
4_260419_1.5 | | CPT018_BH10
3_260419_0.2 | | CPT018_BH10
3_260419_0.5 | | CPT018_BH10
3_260419_1.0 | |
|---|--------------|------|-------|------------------|--------|--------------------|-------|-----------------------------|-------|-----------------------------|------|-----------------------------|--|-----------------------------|--|-----------------------------|--|
| | | | | | | | | | | | | | | | | | |
| | | | | Compound | Method | LOR | Unit | | | | | | | | | | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | ---- | <0.5 | -- | <0.5 | -- | ---- | <0.5 | | | | | |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | ---- | <0.03 | -- | <0.03 | -- | ---- | <0.03 | | | | | |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | ---- | <0.03 | -- | <0.03 | -- | ---- | <0.03 | | | | | |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | ---- | <0.05 | -- | <0.05 | -- | ---- | <0.05 | | | | | |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | ---- | <0.03 | -- | <0.03 | -- | ---- | <0.03 | | | | | |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | ---- | <0.03 | -- | <0.03 | -- | ---- | <0.03 | | | | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | ---- | <10 | | <10 | | ---- | <10 | | | | | |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | ---- | <50 | -- | <50 | -- | ---- | <50 | | | | | |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT020_BH10
4_260419_0.5 | CPT020_BH10
4_260419_1.5 | CPT018_BH10
3_260419_0.2 | CPT018_BH10
3_260419_0.5 | CPT018_BH10
3_260419_1.0 |
|--|--------------|------|---------|------------------|-------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | | | | | | | | |
| | | | | | | | | | | |
| Compound | Method | LOR | Unit | | | | | | | |
| EA001: pH in soil using 0.01M CaCl2 extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | ---- | 5.6 ± 0.1 | 5.3 ± 0.1 | ---- | 5.8 ± 0.1 |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | ---- | 8 ± 2 | 6 ± 2 | ---- | 9 ± 2 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | ---- | <1 -- | <1 -- | ---- | <1 -- |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | ---- | <5 -- | 11 ± 1 | ---- | <5 -- |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | ---- | 11 ± 2 | 18 ± 2 | ---- | 8 ± 1 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | ---- | <2 -- | <2 -- | ---- | <2 -- |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | ---- | 8 ± 0.8 | 7 ± 0.8 | ---- | 11 ± 1 |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | ---- | <5 -- | <5 -- | ---- | <5 -- |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | ---- | <2 -- | <2 -- | ---- | <2 -- |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | ---- | <5 -- | <5 -- | ---- | <5 -- |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | ---- | <5 -- | 34 ± 5 | ---- | <5 -- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | ---- | <0.1 -- | <0.1 -- | ---- | <0.1 -- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | ---- | <0.5 -- | <0.5 -- | ---- | <0.5 -- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | ---- | <1 | <1 | ---- | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | ---- | 250 ± 50 | 140 ± 40 | ---- | 290 ± 50 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | ---- | <0.2 | <0.2 | ---- | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | ---- | <0.2 -- | <0.2 -- | ---- | <0.2 -- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | ---- | <0.02 | <0.02 | ---- | <0.02 |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | ---- | <0.02 | <0.02 | ---- | <0.02 |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | ---- | <0.01 -- | <0.01 -- | ---- | <0.01 -- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | ---- | <0.03 -- | <0.03 -- | ---- | <0.03 -- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | ---- | <1 -- | <1 -- | ---- | <1 -- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT020_BH10
4_260419_0.5 | CPT020_BH10
4_260419_1.5 | CPT018_BH10
3_260419_0.2 | CPT018_BH10
3_260419_0.5 | CPT018_BH10
3_260419_1.0 |
|--|--------------|------|-------|--------------------|---------------|---------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 |
| Compound | Method | LOR | Unit | | □□□□
□□□ □ | □□□□
□□□ □ | EM1906206-008 MU | EM1906206-010 MU | EM1906206-013 MU | EM1906206-014 MU | EM1906206-015 MU |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | ---- | <0.5 | .. | <0.5 | .. | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | ---- | <0.5 | .. | <0.5 | .. | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | ---- | <0.03 | .. | <0.03 | .. | <0.03 |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | ---- | <0.03 | .. | <0.03 | .. | <0.03 |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | ---- | <0.05 | .. | <0.05 | .. | <0.05 |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | ---- | <0.03 | .. | <0.03 | .. | <0.03 |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | ---- | <0.03 | .. | <0.03 | .. | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | ---- | <10 | | <10 | | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | ---- | <50 | .. | <50 | .. | <50 |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT020_BH10
4_260419_0.5 | CPT020_BH10
4_260419_1.5 | CPT018_BH10
3_260419_0.2 | CPT018_BH10
3_260419_0.5 | CPT018_BH10
3_260419_1.0 |
|--|--------------|------|---------|--------------------|---------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | | Sampling date/time | | | | | | |
| Compound | Method | LOR | Unit | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | ---- | 5.6 ± 0.1 | 5.3 ± 0.1 | ---- | 5.8 ± 0.1 |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | ---- | 8 ± 2 | 6 ± 2 | ---- | 9 ± 2 |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | ---- | <1 -- | <1 -- | ---- | <1 -- |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | ---- | <5 -- | 11 ± 1 | ---- | <5 -- |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | ---- | 11 ± 2 | 18 ± 2 | ---- | 8 ± 1 |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | ---- | <2 -- | <2 -- | ---- | <2 -- |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | ---- | 8 ± 0.8 | 7 ± 0.8 | ---- | 11 ± 1 |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | ---- | <5 -- | <5 -- | ---- | <5 -- |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | ---- | <2 -- | <2 -- | ---- | <2 -- |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | ---- | <5 -- | <5 -- | ---- | <5 -- |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | ---- | <5 -- | 34 ± 5 | ---- | <5 -- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | ---- | <0.1 -- | <0.1 -- | ---- | <0.1 -- |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | ---- | <0.5 -- | <0.5 -- | ---- | <0.5 -- |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | ---- | <1 | <1 | ---- | <1 |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | ---- | 250 ± 50 | 140 ± 40 | ---- | 290 ± 50 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | ---- | <0.1 -- | <0.1 -- | ---- | <0.1 -- |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | ---- | <0.2 | <0.2 | ---- | <0.2 |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | ---- | <0.2 -- | <0.2 -- | ---- | <0.2 -- |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | ---- | <0.01 -- | <0.01 -- | ---- | <0.01 -- |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | ---- | <0.03 -- | <0.03 -- | ---- | <0.03 -- |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | ---- | <1 -- | <1 -- | ---- | <1 -- |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT020_BH10
4_260419_0.5 | CPT020_BH10
4_260419_1.5 | CPT018_BH10
3_260419_0.2 | CPT018_BH10
3_260419_0.5 | CPT018_BH10
3_260419_1.0 |
|--|--------------|------|-------|--------------------|--------------------|--------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | | Sampling date/time | □ □ □ □ □ □ | □ □ □ □ □ □ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 |
| Compound | Method | LOR | Unit | | □ □ □ □
□ □ □ □ | □ □ □ □
□ □ □ □ | EM1906206-008 MU | EM1906206-010 MU | EM1906206-013 MU | EM1906206-014 MU | EM1906206-015 MU |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | ---- | <0.5 | .. | <0.5 | .. | <0.5 |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | ---- | <0.5 | .. | <0.5 | .. | <0.5 |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | ---- | <0.03 | .. | <0.03 | .. | <0.03 |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | ---- | <10 | | <10 | | <10 |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | ---- | <50 | .. | <50 | .. | <50 |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | Sampling date/time | | CPT018_BH10
3_260419_1.5 | CPT020_BH10
5_260419_0.5 | CPT020_BH10
5_260419_1.5 | CPT021_BH10
6_260419_0.2 | CPT021_BH10
6_260419_0.5 |
|---|--------------|------|---------|------------------|--------|--------------------|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | | | | | | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 |
| | | | | | | | | EM1906206-016 MU | EM1906206-019 MU | EM1906206-021 MU | EM1906206-024 MU | EM1906206-025 MU |
| Compound | Method | LOR | Unit | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | ---- | | 5.6 ± 0.1 | 5.7 ± 0.1 | 4.8 ± 0.1 | ---- | |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | ---- | | <5 .. | 8 ± 2 | <5 .. | ---- | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | ---- | | <1 .. | <1 .. | <1 .. | ---- | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | ---- | | <5 .. | <5 .. | <5 .. | ---- | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | ---- | | 13 ± 2 | 8 ± 1 | 8 ± 1 | ---- | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | ---- | | <2 .. | <2 .. | <2 .. | ---- | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | ---- | | 5 ± 0.5 | 10 ± 1 | <2 .. | ---- | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | ---- | | <5 .. | <5 .. | <5 .. | ---- | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | ---- | | <2 .. | <2 .. | <2 .. | ---- | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | ---- | | 5 ± 2 | <5 .. | 8 ± 2 | ---- | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | ---- | | <0.1 .. | <0.1 .. | <0.1 .. | ---- | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | ---- | | <0.5 .. | <0.5 .. | <0.5 .. | ---- | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | ---- | | <1 | <1 | <1 | ---- | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | ---- | | 100 ± 30 | 300 ± 50 | 50 ± 30 | ---- | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | ---- | | <0.2 | <0.2 | <0.2 | ---- | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | ---- | | <0.2 .. | <0.2 .. | <0.2 .. | ---- | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | ---- | | <0.02 | <0.02 | <0.02 | ---- | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | ---- | | <0.02 | <0.02 | <0.02 | ---- | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | ---- | | <0.01 .. | <0.01 .. | <0.01 .. | ---- | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | ---- | | <0.03 .. | <0.03 .. | <0.03 .. | ---- | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | ---- | | <1 .. | <1 .. | <1 .. | ---- | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | ---- | | <0.5 .. | <0.5 .. | <0.5 .. | ---- | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| Sub-Matrix: SOIL | | | | Client sample ID | | | | CPT018_BH10
3_260419_1.5 | CPT020_BH10
5_260419_0.5 | CPT020_BH10
5_260419_1.5 | CPT021_BH10
6_260419_0.2 | CPT021_BH10
6_260419_0.5 |
|---|--------------|------|-------|------------------|---------------|----------------------|----------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | | |
| Compound | Method | LOR | Unit | □□ □□
□□ □□ | □□□□
□□ □□ | EM1906206-016 MU | EM1906206-019 MU | EM1906206-021 MU | EM1906206-024 MU | EM1906206-025 MU | | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | ---- | <0.5 | -- | <0.5 | -- | <0.5 | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | ---- | <0.03 | -- | <0.03 | -- | <0.03 | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | ---- | <0.03 | -- | <0.03 | -- | <0.03 | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | ---- | <0.05 | -- | <0.05 | -- | <0.05 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | ---- | <0.03 | -- | <0.03 | -- | <0.03 | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | ---- | <0.03 | -- | <0.03 | -- | <0.03 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | ---- | <10 | | <10 | | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | ---- | <50 | -- | <50 | -- | <50 | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT018_BH10 | CPT020_BH10 | CPT020_BH10 | CPT021_BH10 | CPT021_BH10 |
|--|--------------|------|---------|------------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|-------------|-------------|
| | | | | 3_260419_1.5 | 5_260419_0.5 | | | 5_260419_1.5 | 6_260419_0.2 | 6_260419_0.5 | | |
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | | |
| Compound | Method | LOR | Unit | □□□ □ | □□□□ □ | EM1906206-016 MU | EM1906206-019 MU | EM1906206-021 MU | EM1906206-024 MU | EM1906206-025 MU | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | ---- | 5.6 ± 0.1 | 5.7 ± 0.1 | 4.8 ± 0.1 | ---- | | |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | ---- | <5 -- | 8 ± 2 | <5 -- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | ---- | <1 -- | <1 -- | <1 -- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | ---- | <5 -- | <5 -- | <5 -- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | ---- | 13 ± 2 | 8 ± 1 | 8 ± 1 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | ---- | <2 -- | <2 -- | <2 -- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | ---- | 5 ± 0.5 | 10 ± 1 | <2 -- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | ---- | <5 -- | <5 -- | <5 -- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | ---- | <2 -- | <2 -- | <2 -- | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | ---- | <5 -- | <5 -- | <5 -- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | ---- | 5 ± 2 | <5 -- | 8 ± 2 | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | ---- | <0.1 -- | <0.1 -- | <0.1 -- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | ---- | <0.5 -- | <0.5 -- | <0.5 -- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | ---- | <1 | <1 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | ---- | 100 ± 30 | 300 ± 50 | 50 ± 30 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | ---- | <0.2 | <0.2 | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | ---- | <0.2 -- | <0.2 -- | <0.2 -- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | ---- | <0.02 | <0.02 | <0.02 | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | ---- | <0.02 | <0.02 | <0.02 | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | ---- | <0.01 -- | <0.01 -- | <0.01 -- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | ---- | <0.03 -- | <0.03 -- | <0.03 -- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | ---- | <1 -- | <1 -- | <1 -- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT018_BH10
3_260419_1.5 | CPT020_BH10
5_260419_0.5 | CPT020_BH10
5_260419_1.5 | CPT021_BH10
6_260419_0.2 | CPT021_BH10
6_260419_0.5 |
|--|--------------|------|-------|--------------------|---------------|---------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 |
| Compound | Method | LOR | Unit | | □□□□
□□□ □ | □□□□
□□□ □ | EM1906206-016 MU | EM1906206-019 MU | EM1906206-021 MU | EM1906206-024 MU | EM1906206-025 MU |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | ---- | <0.5 | .. | <0.5 | .. | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | ---- | <0.5 | .. | <0.5 | .. | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | ---- | <0.03 | .. | <0.03 | .. | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | ---- | <0.03 | .. | <0.03 | .. | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | ---- | <0.05 | .. | <0.05 | .. | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | ---- | <0.03 | .. | <0.03 | .. | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | ---- | <0.03 | .. | <0.03 | .. | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | ---- | <10 | | <10 | | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | ---- | <50 | .. | <50 | .. | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT018_BH10 | CPT020_BH10 | CPT020_BH10 | CPT021_BH10 | CPT021_BH10 |
|--|--------------|------|---------|------------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|-------------|-------------|
| | | | | 3_260419_1.5 | 5_260419_0.5 | | | 5_260419_1.5 | 6_260419_0.2 | 6_260419_0.5 | | |
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | | |
| Compound | Method | LOR | Unit | □□□ □ | □□□□ □ | EM1906206-016 MU | EM1906206-019 MU | EM1906206-021 MU | EM1906206-024 MU | EM1906206-025 MU | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | ---- | 5.6 ± 0.1 | 5.7 ± 0.1 | 4.8 ± 0.1 | ---- | | |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | ---- | <5 -- | 8 ± 2 | <5 -- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | ---- | <1 -- | <1 -- | <1 -- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | ---- | <5 -- | <5 -- | <5 -- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | ---- | 13 ± 2 | 8 ± 1 | 8 ± 1 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | ---- | <2 -- | <2 -- | <2 -- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | ---- | 5 ± 0.5 | 10 ± 1 | <2 -- | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | ---- | <5 -- | <5 -- | <5 -- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | ---- | <2 -- | <2 -- | <2 -- | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | ---- | <5 -- | <5 -- | <5 -- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | ---- | 5 ± 2 | <5 -- | 8 ± 2 | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | ---- | <0.1 -- | <0.1 -- | <0.1 -- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | ---- | <0.5 -- | <0.5 -- | <0.5 -- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | ---- | <1 | <1 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | ---- | 100 ± 30 | 300 ± 50 | 50 ± 30 | ---- | | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | ---- | <0.1 -- | <0.1 -- | <0.1 -- | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | ---- | <0.2 | <0.2 | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | ---- | <0.2 -- | <0.2 -- | <0.2 -- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | ---- | <0.01 -- | <0.01 -- | <0.01 -- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | ---- | <0.03 -- | <0.03 -- | <0.03 -- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | ---- | <1 -- | <1 -- | <1 -- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT018_BH10
3_260419_1.5 | CPT020_BH10
5_260419_0.5 | CPT020_BH10
5_260419_1.5 | CPT021_BH10
6_260419_0.2 | CPT021_BH10
6_260419_0.5 |
|--|--------------|------|-------|--------------------|--------------------|--------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | | Sampling date/time | □ □ □ □ □ □ | □ □ □ □ □ □ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 |
| Compound | Method | LOR | Unit | | □ □ □ □
□ □ □ □ | □ □ □ □
□ □ □ □ | EM1906206-016 MU | EM1906206-019 MU | EM1906206-021 MU | EM1906206-024 MU | EM1906206-025 MU |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | ---- | <0.5 | -- | <0.5 | -- | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | ---- | <0.5 | -- | <0.5 | -- | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | ---- | <0.03 | -- | <0.03 | -- | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | ---- | <10 | | <10 | | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | ---- | <50 | -- | <50 | -- | ---- |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| Sub-Matrix: SOIL | | | | Client sample ID | | Sampling date/time | | CPT021_BH10
6_260419_1.0 | CPT021_BH10
6_260419_1.5 | QC157_26041
9 | QC158_26041
9 | ---- |
|--|--------------|------|---------|------------------|--------------|----------------------|----------------------|-----------------------------|-----------------------------|------------------|------------------|------|
| | | | | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | ---- | | |
| Compound | Method | LOR | Unit | □□□ □
□□ □ | □□□□
□□ □ | EM1906206-026 MU | EM1906206-027 MU | EM1906206-030 MU | EM1906206-031 MU | ---- | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 5.9 ± 0.1 | ---- | 5.6 ± 0.1 | 5.8 ± 0.1 | ---- | | |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 5 ± 2 | ---- | 7 ± 2 | <5 -- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 -- | ---- | <1 -- | <1 -- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | <5 -- | ---- | <5 -- | <5 -- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 8 ± 1 | ---- | 8 ± 1 | 6 ± 1.0 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | 4 ± 1.0 | ---- | <2 -- | <2 -- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 6 ± 0.6 | ---- | 8 ± 0.9 | 4 ± 0.4 | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 -- | ---- | <5 -- | <5 -- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 -- | ---- | <2 -- | <2 -- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | <5 -- | ---- | <5 -- | <5 -- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | <0.1 -- | ---- | <0.1 -- | <0.1 -- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 -- | ---- | <0.5 -- | <0.5 -- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 | ---- | <1 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 200 ± 40 | ---- | 300 ± 50 | 200 ± 40 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 | ---- | <0.2 -- | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 -- | ---- | <0.2 -- | <0.2 -- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 | ---- | <0.02 -- | <0.02 | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 | ---- | <0.02 -- | <0.02 | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 -- | ---- | <0.01 -- | <0.01 -- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 -- | ---- | <0.03 -- | <0.03 -- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 -- | ---- | <1 -- | <1 -- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | <0.5 -- | ---- | <0.5 -- | <0.5 -- | ---- | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

| | | | | Client sample ID | | | CPT021_BH10
6_260419_1.0 | CPT021_BH10
6_260419_1.5 | QC157_26041
9 | QC158_26041
9 | ---- |
|--|--------------|------|-------|--------------------|--------------|--------------|-----------------------------|-----------------------------|----------------------|----------------------|------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | ---- |
| Compound | Method | LOR | Unit | | □□□□
□□ □ | □□□□
□□ □ | EM1906206-026 MU | EM1906206-027 MU | EM1906206-030 MU | EM1906206-031 MU | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 400 | <0.5 .. | ---- | <0.5 .. | <0.5 .. | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 4.8 | <0.03 .. | ---- | <0.03 .. | <0.03 .. | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4.8 | <0.03 .. | ---- | <0.03 .. | <0.03 .. | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 .. | ---- | <0.05 .. | 0.22 ± 0.06 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 16 | <0.03 .. | ---- | <0.03 .. | <0.03 .. | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 50 | <0.03 .. | ---- | <0.03 .. | <0.03 .. | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 2600 | <10 | ---- | <10 .. | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 40000 | <50 .. | ---- | <50 .. | <50 .. | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Client sample ID

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT021_BH10 | CPT021_BH10 | QC157_26041 | QC158_26041 | ---- |
|--|--------------|------|---------|------------------|--------------|----------------------|----------------------|----------------------|----------------------|-------------|-------------|------|
| | | | | 6_260419_1.0 | 6_260419_1.5 | | | 9 | 9 | | | |
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | ---- | | |
| Compound | Method | LOR | Unit | □□□ □ | □□□□ □ | EM1906206-026 MU | EM1906206-027 MU | EM1906206-030 MU | EM1906206-031 MU | | | |
| EG001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 5.9 ± 0.1 | ---- | 5.6 ± 0.1 | 5.8 ± 0.1 | ---- | | |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | 5 ± 2 | ---- | 7 ± 2 | <5 -- | ---- | | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 -- | ---- | <1 -- | <1 -- | ---- | | |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | <5 -- | ---- | <5 -- | <5 -- | ---- | | |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 8 ± 1 | ---- | 8 ± 1 | 6 ± 1.0 | ---- | | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | 4 ± 1.0 | ---- | <2 -- | <2 -- | ---- | | |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 6 ± 0.6 | ---- | 8 ± 0.9 | 4 ± 0.4 | ---- | | |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 -- | ---- | <5 -- | <5 -- | ---- | | |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 -- | ---- | <2 -- | <2 -- | ---- | | |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 -- | ---- | <5 -- | <5 -- | ---- | | |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | <5 -- | ---- | <5 -- | <5 -- | ---- | | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | <0.1 -- | ---- | <0.1 -- | <0.1 -- | ---- | | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 -- | ---- | <0.5 -- | <0.5 -- | ---- | | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 | ---- | <1 | <1 | ---- | | |
| EK040T: Fluoride Total | | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 200 ± 40 | ---- | 300 ± 50 | 200 ± 40 | ---- | | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 | ---- | <0.2 -- | <0.2 | ---- | | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 -- | ---- | <0.2 -- | <0.2 -- | ---- | | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 | ---- | <0.02 -- | <0.02 | ---- | | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 | ---- | <0.02 -- | <0.02 | ---- | | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 -- | ---- | <0.01 -- | <0.01 -- | ---- | | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 -- | ---- | <0.03 -- | <0.03 -- | ---- | | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 -- | ---- | <1 -- | <1 -- | ---- | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | | CPT021_BH10
6_260419_1.0 | CPT021_BH10
6_260419_1.5 | QC157_26041
9 | QC158_26041
9 | ---- |
|--|--------------|------|-------|--------------------|---------------|---------------|-----------------------------|-----------------------------|----------------------|----------------------|------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | ---- |
| Compound | Method | LOR | Unit | | □□□□
□□□ □ | □□□□
□□□ □ | EM1906206-026 MU | EM1906206-027 MU | EM1906206-030 MU | EM1906206-031 MU | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 5 | <0.5 .. | ---- | <0.5 .. | <0.5 .. | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 100 | <0.5 .. | ---- | <0.5 .. | <0.5 .. | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 .. | ---- | <0.03 .. | <0.03 .. | ---- |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1.2 | <0.03 .. | ---- | <0.03 .. | <0.03 .. | ---- |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | | 50 | <0.05 .. | ---- | <0.05 .. | 0.22 ± 0.06 | ---- |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 4 | <0.03 .. | ---- | <0.03 .. | <0.03 .. | ---- |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 10 | <0.03 .. | ---- | <0.03 .. | <0.03 .. | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 650 | <10 .. | ---- | <10 .. | <10 .. | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 10000 | <50 .. | ---- | <50 .. | <50 .. | ---- |

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client sample ID

| | | | | | | | | | | | | | | |
|--|--|--|--|----------------------|------|---------|---------|----------------------|------------------|----------------------|------------------|-----------|----------------------|--|
| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT021_BH10 | CPT021_BH10 | QC157_26041 | QC158_26041 | ---- | | |
| | | | | 6_260419_1.0 | | | | 6_260419_1.5 | | 9 | | | 9 | |
| | | | | 26-Apr-2019
15:00 | | | | 26-Apr-2019
15:00 | | 26-Apr-2019
15:00 | | | 26-Apr-2019
15:00 | |
| | | | | Sampling date/time | | □□□ □□ | □□□□ □□ | EM1906206-026 MU | EM1906206-027 MU | EM1906206-030 MU | EM1906206-031 MU | | | |
| Compound | | | | Method | LOR | Unit | | | | | | | | |
| EG001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | | | | |
| pH (CaCl2) | | | | EA001 | 0.1 | pH Unit | 4 | 9 | 5.9 ± 0.1 | ---- | 5.6 ± 0.1 | 5.8 ± 0.1 | ---- | |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | | | | | |
| Arsenic | | | | EG005T | 5 | mg/kg | ---- | 20 | 5 ± 2 | ---- | 7 ± 2 | <5 -- | ---- | |
| Cadmium | | | | EG005T | 1 | mg/kg | ---- | 3 | <1 -- | ---- | <1 -- | <1 -- | ---- | |
| Copper | | | | EG005T | 5 | mg/kg | ---- | 100 | <5 -- | ---- | <5 -- | <5 -- | ---- | |
| Lead | | | | EG005T | 5 | mg/kg | ---- | 300 | 8 ± 1 | ---- | 8 ± 1 | 6 ± 1.0 | ---- | |
| Molybdenum | | | | EG005T | 2 | mg/kg | ---- | 40 | 4 ± 1.0 | ---- | <2 -- | <2 -- | ---- | |
| Nickel | | | | EG005T | 2 | mg/kg | ---- | 60 | 6 ± 0.6 | ---- | 8 ± 0.9 | 4 ± 0.4 | ---- | |
| Selenium | | | | EG005T | 5 | mg/kg | ---- | 10 | <5 -- | ---- | <5 -- | <5 -- | ---- | |
| Silver | | | | EG005T | 2 | mg/kg | ---- | 10 | <2 -- | ---- | <2 -- | <2 -- | ---- | |
| Tin | | | | EG005T | 5 | mg/kg | ---- | 50 | <5 -- | ---- | <5 -- | <5 -- | ---- | |
| Zinc | | | | EG005T | 5 | mg/kg | ---- | 200 | <5 -- | ---- | <5 -- | <5 -- | ---- | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | | | | |
| Mercury | | | | EG035T | 0.1 | mg/kg | ---- | 1 | <0.1 -- | ---- | <0.1 -- | <0.1 -- | ---- | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | | | | |
| Hexavalent Chromium | | | | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 -- | ---- | <0.5 -- | <0.5 -- | ---- | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | | | | |
| Total Cyanide | | | | EK026SF | 1 | mg/kg | ---- | 50 | <1 | ---- | <1 | <1 | ---- | |
| EK040T: Fluoride Total | | | | | | | | | | | | | | |
| Fluoride | | | | EK040T | 40 | mg/kg | ---- | 450 | 200 ± 40 | ---- | 300 ± 50 | 200 ± 40 | ---- | |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | | | | | |
| Total Polychlorinated biphenyls | | | | EP066-EM | 0.1 | mg/kg | ---- | 2 | <0.1 -- | ---- | <0.1 -- | <0.1 -- | ---- | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | |
| Benzene | | | | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 | ---- | <0.2 -- | <0.2 | ---- | |
| Sum of monocyclic aromatic hydrocarbons | | | | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 -- | ---- | <0.2 -- | <0.2 -- | ---- | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | | | | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 -- | ---- | <0.01 -- | <0.01 -- | ---- | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | | | | |
| Sum of Phenols (halogenated) | | | | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 -- | ---- | <0.03 -- | <0.03 -- | ---- | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | | | | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 -- | ---- | <1 -- | <1 -- | ---- | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | | | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT021_BH10
6_260419_1.0 | CPT021_BH10
6_260419_1.5 | QC157_26041
9 | QC158_26041
9 | ---- |
|--|--------------|------|-------|--------------------|---------------|---------------|-----------------------------|-----------------------------|----------------------|----------------------|------|
| | | | | Sampling date/time | □□□□ □□ | □□□□ □□ | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | 26-Apr-2019
15:00 | ---- |
| Compound | Method | LOR | Unit | | □□□□
□□□ □ | □□□□
□□□ □ | EM1906206-026 MU | EM1906206-027 MU | EM1906206-030 MU | EM1906206-031 MU | |
| EP075B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | | 1 | <0.5 .. | ---- | <0.5 .. | <0.5 .. | ---- |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | | 20 | <0.5 .. | ---- | <0.5 .. | <0.5 .. | ---- |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | | 1 | <0.03 .. | ---- | <0.03 .. | 0.22 ± 0.11 | ---- |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | | 100 | <10 | ---- | <10 .. | <10 | ---- |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | | 1000 | <50 .. | ---- | <50 .. | <50 .. | ---- |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1906206 | Page | : 1 of 21 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 26-Apr-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 26-Apr-2019 |
| C-O-C number | : ---- | Issue Date | : 03-May-2019 |
| Sampler | : [REDACTED] | | |
| Site | : GIJPP EES Fieldwork | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 37 | | |
| No. of samples analysed | : 25 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

□□□ □□ □□

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

□□□□□□

Senior Acid Sulfate Soil Chemist
Senior Inorganic Chemist
2IC Organic Chemist
Senior Inorganic Instrument Chemist
Senior Organic Chemist

□□□ □□□ □□ □□ □□

Brisbane Acid Sulphate Soils, Stafford, QLD
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC
Melbourne Inorganics, Springvale, VIC
Melbourne Organics, Springvale, VIC

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|-------------------------|--------------------|------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2322282) | | | | | | | | | |
| EM1906206-001 | CPT018_BH06_260419_0.2 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 6 | 6 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 39 | 39 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 28 | 25 | 10.8 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 572 | 492 | 15.0 | 0% - 20% |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | 8 | 10 | 16.4 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 288 | 253 | 12.7 | 0% - 20% |
| EM1906206-024 | CPT021_BH106_260419_0.2 | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 8 | 7 | 15.8 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 8 | 8 | 0.00 | No Limit |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2322114) | | | | | | | | | |
| EM1906200-015 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 7.0 | 7.0 | 0.00 | 0% - 20% |
| EM1906206-001 | CPT018_BH06_260419_0.2 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.5 | 5.4 | 0.00 | 0% - 20% |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2322115) | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|-------------------------|---|------------|-----------------------------------|-------------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2322115) - continued | | | | | | | | | |
| EM1906206-031 | QC158_260419 | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 5.8 | 5.7 | 0.00 | 0% - 20% |
| EA033-A: Actual Acidity (QC Lot: 2322618) | | | | | | | | | |
| EM1906206-002 | CPT018_BH06_260419_0.5 | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 7.1 | 6.7 | 5.80 | 0% - 20% |
| ES1912390-002 | Anonymous | EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | <0.02 | 0.00 | No Limit |
| | | EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | <2 | 0.00 | No Limit |
| | | EA033: pH KCl (23A) | ---- | 0.1 | pH Unit | 6.3 | 6.4 | 1.57 | 0% - 20% |
| EA033-B: Potential Acidity (QC Lot: 2322618) | | | | | | | | | |
| EM1906206-002 | CPT018_BH06_260419_0.5 | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.008 | 0.010 | 18.2 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| ES1912390-002 | Anonymous | EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | 0.012 | 0.013 | 9.84 | No Limit |
| | | EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | <10 | 0.00 | No Limit |
| EA033-C: Acid Neutralising Capacity (QC Lot: 2322618) | | | | | | | | | |
| EM1906206-002 | CPT018_BH06_260419_0.5 | EA033: Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | 0.19 | 0.19 | 0.00 | 0% - 50% |
| | | EA033: sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | 0.06 | 0.06 | 0.00 | No Limit |
| | | EA033: acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | 38 | 39 | 3.17 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2322394) | | | | | | | | | |
| EM1906201-024 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 22.1 | 19.7 | 11.6 | 0% - 20% |
| EM1906206-001 | CPT018_BH06_260419_0.2 | EA055: Moisture Content | ---- | 0.1 | % | 8.7 | 8.5 | 1.86 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2322395) | | | | | | | | | |
| EM1906303-003 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 5.4 | 5.6 | 3.44 | No Limit |
| EM1906303-011 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 7.4 | 6.9 | 7.43 | No Limit |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2322281) | | | | | | | | | |
| EM1906206-001 | CPT018_BH06_260419_0.2 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | 0.1 | 0.1 | 0.00 | No Limit |
| EM1906206-024 | CPT021_BH106_260419_0.2 | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2320483) | | | | | | | | | |
| EM1906145-057 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1906200-015 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2320484) | | | | | | | | | |
| EM1906206-021 | CPT020_BH105_260419_1.5 | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2322614) | | | | | | | | | |
| EM1906200-011 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|-------------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2322614) - continued | | | | | | | | | |
| EM1906206-007 | CPT020_BH104_260419_0.2 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2319893) | | | | | | | | | |
| EM1906197-001 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 60 | 70 | 0.00 | No Limit |
| EM1906206-001 | CPT018_BH06_260419_0.2 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 90 | 220 | 83.9 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2319894) | | | | | | | | | |
| EM1906206-031 | QC158_260419 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 200 | 180 | 7.83 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2319660) | | | | | | | | | |
| EM1906200-011 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM1906206-010 | CPT020_BH104_260419_1.5 | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2319629) | | | | | | | | | |
| EM1906200-011 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1906206-015 | CPT018_BH103_260419_1.0 | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP074H: Naphthalene (QC Lot: 2319629) | | | | | | | | | |
| EM1906200-011 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM1906206-015 | CPT018_BH103_260419_1.0 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2319629) | | | | | | | | | |
| EM1906200-011 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|-------------------------|--|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2319629) - continued | | | | | | | | | |
| EM1906200-011 | Anonymous | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EM1906206-015 | CPT018_BH103_260419_1.0 | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| | | EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2319658) | | | | | | | |
| EM1906200-011 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|-------------------------|---|-----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2319658) - continued | | | | | | | | | |
| EM1906200-011 | Anonymous | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-9
0-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1906206-010 | CPT020_BH104_260419_1.5 | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-9
0-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2319658) | | | | | | | | | |
| EM1906200-011 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1906206-010 | CPT020_BH104_260419_1.5 | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2319658) | | | | | | | | | |
| EM1906200-011 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|-------------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2319658) - continued | | | | | | | | | |
| EM1906200-011 | Anonymous | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1906206-010 | CPT020_BH104_260419_1.5 | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 207-08-9 | | | | | | |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit | | |
| EP075I: Organochlorine Pesticides (QC Lot: 2319658) | | | | | | | | | |
| EM1906200-011 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|-------------------------|-----------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2319658) - continued | | | | | | | | | |
| EM1906200-011 | Anonymous | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM1906206-010 | CPT020_BH104_260419_1.5 | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2319629) | | | | | | | | | |
| EM1906200-011 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1906206-015 | CPT018_BH103_260419_1.0 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2319651) | | | | | | | | | |
| EM1906121-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1906201-041 | Anonymous | EP080: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2319659) | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|-------------------------|---|-------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2319659) - continued | | | | | | | | | |
| EM1906200-011 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1906206-010 | CPT020_BH104_260419_1.5 | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2319629) | | | | | | | | | |
| EM1906200-011 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1906206-015 | CPT018_BH103_260419_1.0 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2319651) | | | | | | | | | |
| EM1906121-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM1906201-041 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2319659) | | | | | | | | | |
| EM1906200-011 | Anonymous | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EM1906206-010 | CPT020_BH104_260419_1.5 | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2319651) | | | | | | | | | |
| EM1906121-001 | Anonymous | EP080: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM1906201-041 | Anonymous | EP080: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EP080: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit | | |



| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|----------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2319383) | | | | | | | | | |
| EM1906003-001 | Anonymous | EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074E: Halogenated Aliphatic Compounds (QC Lot: 2319383) | | | | | | | | | |
| EM1906003-001 | Anonymous | EP074: 1.1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: trans-1.2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | <50 | 0.00 | No Limit |
| EP074F: Halogenated Aromatic Compounds (QC Lot: 2319383) | | | | | | | | | |
| EM1906003-001 | Anonymous | EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | 13 | 14 | 0.00 | No Limit |
| | | EP074: 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP074: 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP074G: Trihalomethanes (QC Lot: 2319383) | | | | | | | | | |
| EM1906003-001 | Anonymous | EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2319382) | | | | | | | | | |
| EM1906067-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1906003-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | 20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2319382) | | | | | | | | | |
| EM1906067-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM1906003-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | 20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2319382) | | | | | | | | | |
| EM1906067-001 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EM1906003-001 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |

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 Work Order : EM1906206
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Sub-Matrix: **WATER**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080: BTEXN (QC Lot: 2319382) - continued | | | | | | | | | |
| EM1906003-001 | Anonymous | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-------|-------------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2322282) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 92.2 | 78 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 90.8 | 76 | 108 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 93.6 | 78 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 93.8 | 78 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 89.7 | 78 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 99.8 | 80 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 101 | 92 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 81.7 | 80 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 93.2 | 78 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 96.9 | 79 | 110 |
| EA033-A: Actual Acidity (QCLot: 2322618) | | | | | | | | |
| EA033: pH KCl (23A) | ---- | ---- | pH Unit | ---- | 4.5 pH Unit | 97.8 | 70 | 130 |
| EA033: Titratable Actual Acidity (23F) | ---- | 2 | mole H+ / t | <2 | 24.6 mole H+ / t | 76.4 | 70 | 130 |
| EA033: sulfidic - Titratable Actual Acidity (s-23F) | ---- | 0.02 | % pyrite S | <0.02 | ---- | ---- | ---- | ---- |
| EA033-B: Potential Acidity (QCLot: 2322618) | | | | | | | | |
| EA033: Chromium Reducible Sulfur (22B) | ---- | 0.005 | % S | <0.005 | 0.23483 % S | 110 | 70 | 130 |
| EA033: acidity - Chromium Reducible Sulfur (a-22B) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033-C: Acid Neutralising Capacity (QCLot: 2322618) | | | | | | | | |
| EA033: Acid Neutralising Capacity (19A2) | ---- | 0.01 | % CaCO3 | <0.01 | 10 % CaCO3 | 95.5 | 70 | 130 |
| EA033: acidity - Acid Neutralising Capacity (a-19A2) | ---- | 10 | mole H+ / t | <10 | ---- | ---- | ---- | ---- |
| EA033: sulfidic - Acid Neutralising Capacity (s-19A2) | ---- | 0.01 | % pyrite S | <0.01 | ---- | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2322281) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 92.8 | 77 | 104 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2320483) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 76.4 | 75 | 112 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2320484) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 40 mg/kg | 78.6 | 75 | 112 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2322614) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 105 | 80 | 107 |
| EK040T: Fluoride Total (QCLot: 2319893) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 87.5 | 75 | 110 |
| EK040T: Fluoride Total (QCLot: 2319894) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 89.8 | 75 | 110 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2319660) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 98.0 | 63 | 118 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2319629) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 98.3 | 68 | 117 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 97.5 | 67 | 118 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 96.5 | 66 | 119 |
| EP074-UT: meta- & para-Xylene | 108-38-3
106-42-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 96.5 | 66 | 115 |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 91.5 | 71 | 115 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 91.9 | 68 | 113 |
| EP074H: Naphthalene (QCLot: 2319629) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | 91.8 | 75 | 113 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2319629) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 93.4 | 51 | 136 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 101 | 56 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 101 | 70 | 117 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 99.4 | 61 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 96.1 | 70 | 114 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 102 | 69 | 112 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 104 | 62 | 124 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 102 | 56 | 126 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 91.6 | 73 | 118 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 96.0 | 66 | 117 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 89.7 | 76 | 115 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 95.4 | 62 | 120 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 98.3 | 71 | 118 |
| EP074-UT: 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 80.7 | 69 | 119 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 99.6 | 47 | 125 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 95.9 | 73 | 114 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 95.2 | 66 | 114 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 92.0 | 73 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 92.2 | 54 | 121 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2319658) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 96.7 | 69 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 103 | 55 | 128 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 110 | 70 | 123 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 103 | 56 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 113 | 66 | 126 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 121 | 60 | 126 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2319658) - continued | | | | | | | | |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 4 mg/kg | 100 | 65 | 124 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 6 mg/kg | 106 | 64 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 91.0 | 43 | 127 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2319658) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 91.6 | 58 | 126 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 97.7 | 65 | 126 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 99.6 | 64 | 123 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 102 | 53 | 128 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 93.8 | 56 | 136 |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 12 mg/kg | 93.3 | 41 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 12 mg/kg | 83.9 | 48 | 130 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 12 mg/kg | 91.6 | 47 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 12 mg/kg | 88.2 | 51 | 123 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 92.6 | 36 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2319658) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 104 | 70 | 123 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 97.1 | 70 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 121 | 68 | 131 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 108 | 72 | 128 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 94.8 | 75 | 128 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 95.0 | 55 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 113 | 75 | 128 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 118 | 73 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 114 | 72 | 131 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 117 | 77 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 119 | 76 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 70 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 113 | 72 | 134 |
| EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 72 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 71 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2319658) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 106 | 71 | 122 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 106 | 70 | 126 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 101 | 70 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 71 | 129 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 84.9 | 74 | 128 |



Sub-Matrix: **SOIL**

| | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075I: Organochlorine Pesticides (QCLot: 2319658) - continued | | | | | | | | |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 95.3 | 72 | 126 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 106 | 72 | 127 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 98.8 | 73 | 129 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 121 | 72 | 131 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 109 | 73 | 130 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 105 | 64 | 137 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 103 | 73 | 131 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 98.4 | 72 | 132 |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 126 | 42 | 160 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 109 | 55 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 95.2 | 73 | 132 |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 103 | 75 | 134 |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 96.0 | 73 | 133 |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 105 | 67 | 133 |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 67 | 135 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2319629) | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 105 | 63 | 122 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2319651) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 36 mg/kg | 88.2 | 61 | 127 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2319659) | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 806 mg/kg | 100 | 70 | 120 |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3006 mg/kg | 105 | 83 | 121 |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1584 mg/kg | 94.0 | 77 | 117 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2319629) | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 104 | 62 | 121 |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTE
X | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2319651) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 45 mg/kg | 87.5 | 60 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2319659) | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1160 mg/kg | 98.0 | 75 | 119 |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 3978 mg/kg | 98.1 | 82 | 119 |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 313 mg/kg | 92.5 | 68 | 124 |
| EP080: BTEXN (QCLot: 2319651) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2 mg/kg | 80.8 | 63 | 119 |
| EP080: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 87.7 | 67 | 126 |
| EP080: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 81.2 | 66 | 124 |



| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | | |
|---|------------|-----|-------|-----------------------------|---------------------------------------|---------------|--------------------|---------------------|------|
| Method: Compound | CAS Number | LOR | Unit | | Result | Spike | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | Concentration | LCS | Low | High |
| EP080: BTEXN (QCLot: 2319651) - continued | | | | | | | | | |
| EP080: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | 4 mg/kg | 87.6 | 68 | 128 | |
| | 106-42-3 | | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 91.0 | 73 | 128 | |
| EP080: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.5 mg/kg | 81.6 | 61 | 123 | |

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-----|------|-----------------------------|---------------------------------------|-------|--------------------|---------------------|
| Method: Compound | CAS Number | LOR | Unit | | Result | Spike | Spike Recovery (%) | Recovery Limits (%) |
| | | | | Concentration | | LCS | Low | High |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2319578) | | | | | | | | |
| EP066: Total Polychlorinated biphenyls | ---- | 1 | µg/L | <1 | 10 µg/L | 81.6 | 48 | 124 |
| EP068A: Organochlorine Pesticides (OC) (QCLot: 2319577) | | | | | | | | |
| EP068: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 111 | 56 | 118 |
| EP068: Hexachlorobenzene (HCB) | 118-74-1 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 86.8 | 49 | 114 |
| EP068: beta-BHC | 319-85-7 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 91.2 | 60 | 117 |
| EP068: gamma-BHC | 58-89-9 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 69.0 | 53 | 121 |
| EP068: delta-BHC | 319-86-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 92.5 | 59 | 117 |
| EP068: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 85.7 | 54 | 120 |
| EP068: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 83.3 | 54 | 118 |
| EP068: Heptachlor epoxide | 1024-57-3 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 87.5 | 58 | 121 |
| EP068: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 89.9 | 52 | 124 |
| EP068: alpha-Endosulfan | 959-98-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 87.6 | 55 | 122 |
| EP068: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 86.7 | 55 | 121 |
| EP068: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 81.6 | 55 | 122 |
| EP068: 4,4`-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 87.7 | 52 | 122 |
| EP068: Endrin | 72-20-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 78.3 | 56 | 131 |
| EP068: beta-Endosulfan | 33213-65-9 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 89.2 | 57 | 121 |
| EP068: 4,4`-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 85.6 | 55 | 125 |
| EP068: Endrin aldehyde | 7421-93-4 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 94.1 | 58 | 126 |
| EP068: Endosulfan sulfate | 1031-07-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 81.1 | 50 | 126 |
| EP068: 4,4`-DDT | 50-29-3 | 2 | µg/L | <2.0 | 2.5 µg/L | 93.6 | 51 | 132 |
| EP068: Endrin ketone | 53494-70-5 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 94.4 | 58 | 121 |
| EP068: Methoxychlor | 72-43-5 | 2 | µg/L | <2.0 | 2.5 µg/L | 95.0 | 50 | 134 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2319383) | | | | | | | | |
| EP074: Styrene | 100-42-5 | 5 | µg/L | <5 | 20 µg/L | 104 | 79 | 116 |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2319383) | | | | | | | | |
| EP074: Vinyl chloride | 75-01-4 | 50 | µg/L | <50 | 200 µg/L | 103 | 53 | 135 |
| EP074: 1,1-Dichloroethene | 75-35-4 | 5 | µg/L | <5 | 20 µg/L | 97.8 | 63 | 124 |
| EP074: Methylene chloride | 75-09-2 | 5 | µg/L | <5 | 20 µg/L | 108 | 83 | 122 |
| EP074: trans-1,2-Dichloroethene | 156-60-5 | 5 | µg/L | <5 | 20 µg/L | 100 | 68 | 119 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2319383) - continued | | | | | | | | |
| EP074: cis-1.2-Dichloroethene | 156-59-2 | 5 | µg/L | <5 | 20 µg/L | 106 | 77 | 118 |
| EP074: 1.1.1-Trichloroethane | 71-55-6 | 5 | µg/L | <5 | 20 µg/L | 105 | 68 | 119 |
| EP074: Carbon Tetrachloride | 56-23-5 | 5 | µg/L | <5 | 20 µg/L | 107 | 62 | 117 |
| EP074: 1.2-Dichloroethane | 107-06-2 | 5 | µg/L | <5 | 20 µg/L | 101 | 81 | 117 |
| EP074: Trichloroethene | 79-01-6 | 5 | µg/L | <5 | 20 µg/L | 104 | 67 | 120 |
| EP074: 1.1.2-Trichloroethane | 79-00-5 | 5 | µg/L | <5 | 20 µg/L | 105 | 84 | 117 |
| EP074: Tetrachloroethene | 127-18-4 | 5 | µg/L | <5 | 20 µg/L | 107 | 67 | 120 |
| EP074: 1.1.1.2-Tetrachloroethane | 630-20-6 | 5 | µg/L | <5 | 20 µg/L | 103 | 76 | 112 |
| EP074: 1.1.1.2.2-Tetrachloroethane | 79-34-5 | 5 | µg/L | <5 | 20 µg/L | 107 | 81 | 124 |
| EP074: Hexachlorobutadiene | 87-68-3 | 5 | µg/L | <5 | 20 µg/L | 98.9 | 62 | 128 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2319383) | | | | | | | | |
| EP074: Chlorobenzene | 108-90-7 | 5 | µg/L | <5 | 20 µg/L | 101 | 81 | 116 |
| EP074: 1.4-Dichlorobenzene | 106-46-7 | 5 | µg/L | <5 | 20 µg/L | 107 | 75 | 118 |
| EP074: 1.2-Dichlorobenzene | 95-50-1 | 5 | µg/L | <5 | 20 µg/L | 106 | 81 | 113 |
| EP074: 1.2.4-Trichlorobenzene | 120-82-1 | 5 | µg/L | <5 | 20 µg/L | 100 | 64 | 122 |
| EP074G: Trihalomethanes (QCLot: 2319383) | | | | | | | | |
| EP074: Chloroform | 67-66-3 | 5 | µg/L | <5 | 20 µg/L | 108 | 79 | 117 |
| EP075(SIM)A: Phenolic Compounds (QCLot: 2319575) | | | | | | | | |
| EP075(SIM): Phenol | 108-95-2 | 1 | µg/L | <1.0 | 5 µg/L | 38.2 | 20 | 51 |
| EP075(SIM): 2-Chlorophenol | 95-57-8 | 1 | µg/L | <1.0 | 5 µg/L | 88.3 | 46 | 103 |
| EP075(SIM): 2-Methylphenol | 95-48-7 | 1 | µg/L | <1.0 | 5 µg/L | 81.1 | 43 | 98 |
| EP075(SIM): 3- & 4-Methylphenol | 1319-77-3 | 2 | µg/L | <2.0 | 10 µg/L | 74.1 | 41 | 90 |
| EP075(SIM): 2-Nitrophenol | 88-75-5 | 1 | µg/L | <1.0 | 5 µg/L | 98.3 | 44 | 114 |
| EP075(SIM): 2.4-Dimethylphenol | 105-67-9 | 1 | µg/L | <1.0 | 5 µg/L | 92.8 | 43 | 115 |
| EP075(SIM): 2.4-Dichlorophenol | 120-83-2 | 1 | µg/L | <1.0 | 5 µg/L | 98.8 | 48 | 111 |
| EP075(SIM): 2.6-Dichlorophenol | 87-65-0 | 1 | µg/L | <1.0 | 5 µg/L | 97.7 | 50 | 116 |
| EP075(SIM): 4-Chloro-3-methylphenol | 59-50-7 | 1 | µg/L | <1.0 | 5 µg/L | 99.3 | 49 | 110 |
| EP075(SIM): 2.4.6-Trichlorophenol | 88-06-2 | 1 | µg/L | <1.0 | 5 µg/L | 103 | 48 | 113 |
| EP075(SIM): 2.4.5-Trichlorophenol | 95-95-4 | 1 | µg/L | <1.0 | 5 µg/L | 105 | 47 | 115 |
| EP075(SIM): Pentachlorophenol | 87-86-5 | 2 | µg/L | <2.0 | 10 µg/L | 91.5 | 48 | 130 |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2319575) | | | | | | | | |
| EP075(SIM): Naphthalene | 91-20-3 | 1 | µg/L | <1.0 | 5 µg/L | 97.8 | 48 | 110 |
| EP075(SIM): Acenaphthylene | 208-96-8 | 1 | µg/L | <1.0 | 5 µg/L | 105 | 50 | 117 |
| EP075(SIM): Acenaphthene | 83-32-9 | 1 | µg/L | <1.0 | 5 µg/L | 103 | 53 | 117 |
| EP075(SIM): Fluorene | 86-73-7 | 1 | µg/L | <1.0 | 5 µg/L | 107 | 54 | 118 |
| EP075(SIM): Phenanthrene | 85-01-8 | 1 | µg/L | <1.0 | 5 µg/L | 108 | 59 | 119 |
| EP075(SIM): Anthracene | 120-12-7 | 1 | µg/L | <1.0 | 5 µg/L | 110 | 51 | 113 |
| EP075(SIM): Fluoranthene | 206-44-0 | 1 | µg/L | <1.0 | 5 µg/L | 109 | 61 | 120 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2319575) - continued | | | | | | | | |
| EP075(SIM): Pyrene | 129-00-0 | 1 | µg/L | <1.0 | 5 µg/L | 110 | 56 | 120 |
| EP075(SIM): Benz(a)anthracene | 56-55-3 | 1 | µg/L | <1.0 | 5 µg/L | 102 | 53 | 120 |
| EP075(SIM): Chrysene | 218-01-9 | 1 | µg/L | <1.0 | 5 µg/L | 109 | 57 | 122 |
| EP075(SIM): Benzo(b+j)fluoranthene | 205-99-2 | 1 | µg/L | <1.0 | 5 µg/L | 122 | 56 | 131 |
| | 205-82-3 | | | | | | | |
| EP075(SIM): Benzo(k)fluoranthene | 207-08-9 | 1 | µg/L | <1.0 | 5 µg/L | 118 | 59 | 124 |
| EP075(SIM): Benzo(a)pyrene | 50-32-8 | 0.5 | µg/L | <0.5 | 5 µg/L | 124 | 54 | 124 |
| EP075(SIM): Indeno(1.2.3.cd)pyrene | 193-39-5 | 1 | µg/L | <1.0 | 5 µg/L | 111 | 55 | 124 |
| EP075(SIM): Dibenz(a,h)anthracene | 53-70-3 | 1 | µg/L | <1.0 | 5 µg/L | 111 | 54 | 124 |
| EP075(SIM): Benzo(g,h,i)perylene | 191-24-2 | 1 | µg/L | <1.0 | 5 µg/L | 112 | 56 | 124 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2319382) | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 106 | 65 | 126 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2319576) | | | | | | | | |
| EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | 4030 µg/L | 81.4 | 50 | 129 |
| EP071: C15 - C28 Fraction | ---- | 100 | µg/L | <100 | 15600 µg/L | 95.6 | 55 | 132 |
| EP071: C29 - C36 Fraction | ---- | 50 | µg/L | <50 | 7820 µg/L | 93.5 | 55 | 130 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2319382) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 104 | 64 | 124 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2319576) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 5960 µg/L | 86.3 | 53 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 20700 µg/L | 92.3 | 56 | 131 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1520 µg/L | 92.3 | 53 | 136 |
| EP080: BTEXN (QCLot: 2319382) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 107 | 69 | 123 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 107 | 73 | 124 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 103 | 71 | 125 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 111 | 72 | 129 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 110 | 76 | 129 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 97.5 | 70 | 125 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| | | | | Matrix Spike (MS) Report | | | |
|----------------------|------------------|------------------|------------|--------------------------|------------------------|---------------------|------|
| | | | | Spike
Concentration | SpikeRecovery(%)
MS | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | | | Low | High |



| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|-------------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2322282) | | | | | | | |
| EM1906206-001 | CPT018_BH06_260419_0.2 | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 122 | 78 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 91.6 | 84 | 116 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 95.5 | 82 | 124 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | # Not Determined | 76 | 124 |
| | | EG005T: Molybdenum | 7439-98-7 | 50 mg/kg | 98.7 | 79 | 117 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 95.7 | 78 | 120 |
| | | EG005T: Selenium | 7782-49-2 | 50 mg/kg | 84.7 | 71 | 125 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | # Not Determined | 74 | 128 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2322281) | | | | | | | |
| EM1906206-001 | CPT018_BH06_260419_0.2 | EG035T: Mercury | 7439-97-6 | 0.5 mg/kg | 84.0 | 76 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2320483) | | | | | | | |
| EM1906151-010 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | 63.9 | 58 | 114 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2320484) | | | | | | | |
| EM1906206-024 | CPT021_BH106_260419_0.2 | EG048G: Hexavalent Chromium | 18540-29-9 | 40 mg/kg | # 13.6 | 58 | 114 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2322614) | | | | | | | |
| EM1906200-011 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 101 | 77 | 113 |
| EK040T: Fluoride Total (QCLot: 2319893) | | | | | | | |
| EM1906199-001 | Anonymous | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 71.2 | 70 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2319660) | | | | | | | |
| EM1906200-015 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 97.7 | 36 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2319629) | | | | | | | |
| EM1906200-015 | Anonymous | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 89.0 | 50 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 89.3 | 56 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2319629) | | | | | | | |
| EM1906200-015 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 86.8 | 26 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 83.9 | 50 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 87.6 | 28 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2319658) | | | | | | | |
| EM1906200-011 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 1 mg/kg | 83.0 | 34 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 1 mg/kg | 84.7 | 41 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 1 mg/kg | 48.8 | 10 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2319658) | | | | | | | |
| EM1906200-011 | Anonymous | EP075-EM: Phenol | 108-95-2 | 1 mg/kg | 85.9 | 32 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 mg/kg | 69.9 | 13 | 129 |

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|-------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2319658) | | | | | | | |
| EM1906200-011 | Anonymous | EP075-EM: Acenaphthene | 83-32-9 | 1 mg/kg | 88.4 | 46 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 1 mg/kg | 98.4 | 27 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2319629) | | | | | | | |
| EM1906200-015 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 81.3 | 43 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2319651) | | | | | | | |
| EM1906142-001 | Anonymous | EP080: C6 - C9 Fraction | ---- | 28 mg/kg | 87.8 | 42 | 131 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2319659) | | | | | | | |
| EM1906200-015 | Anonymous | EP071-EM: C10 - C14 Fraction | ---- | 806 mg/kg | 97.6 | 53 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 3006 mg/kg | 101 | 70 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1584 mg/kg | 90.3 | 64 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2319629) | | | | | | | |
| EM1906200-015 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 77.8 | 42 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2319651) | | | | | | | |
| EM1906142-001 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 86.0 | 39 | 129 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2319659) | | | | | | | |
| EM1906200-015 | Anonymous | EP071-EM: >C10 - C16 Fraction | ---- | 1160 mg/kg | 95.2 | 65 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 3978 mg/kg | 94.3 | 67 | 121 |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 313 mg/kg | 87.1 | 44 | 126 |
| EP080: BTEXN (QCLot: 2319651) | | | | | | | |
| EM1906142-001 | Anonymous | EP080: Benzene | 71-43-2 | 2 mg/kg | 97.4 | 50 | 136 |
| | | EP080: Toluene | 108-88-3 | 2 mg/kg | 102 | 56 | 139 |

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP074E: Halogenated Aliphatic Compounds (QCLot: 2319383) | | | | | | | |
| EM1906206-032 | QC358_260419 | EP074: 1,1-Dichloroethene | 75-35-4 | 20 µg/L | 121 | 40 | 124 |
| | | EP074: Trichloroethene | 79-01-6 | 20 µg/L | 103 | 54 | 126 |
| EP074F: Halogenated Aromatic Compounds (QCLot: 2319383) | | | | | | | |
| EM1906206-032 | QC358_260419 | EP074: Chlorobenzene | 108-90-7 | 20 µg/L | 102 | 68 | 132 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2319382) | | | | | | | |
| EM1906206-032 | QC358_260419 | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 96.1 | 43 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2319382) | | | | | | | |
| EM1906206-032 | QC358_260419 | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 90.9 | 44 | 122 |
| EP080: BTEXN (QCLot: 2319382) | | | | | | | |



Sub-Matrix: WATER

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080: BTEXN (QCLot: 2319382) - continued | | | | | | | |
| EM1906206-032 | QC358_260419 | EP080: Benzene | 71-43-2 | 20 µg/L | 113 | 68 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 111 | 72 | 132 |

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|---------------------------|-------------------------|------------------------------------|
| Work Order | : EM1906206 | Page | : 1 of 15 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 26-Apr-2019 |
| Site | : GIJPP EES Fieldwork | Issue Date | : 03-May-2019 |
| Sampler | : [REDACTED] | No. of samples received | : 37 |
| Order number | : | No. of samples analysed | : 25 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|-------------------------|---------------------|------------|----------------|---------|---|
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG005(ED093)T: Total Metals by ICP-AES | EM1906206--001 | CPT018_BH06_260419_0.2 | Lead | 7439-92-1 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |
| EG005(ED093)T: Total Metals by ICP-AES | EM1906206--001 | CPT018_BH06_260419_0.2 | Zinc | 7440-66-6 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |
| EG048: Hexavalent Chromium (Alkaline Digest) | EM1906206--024 | CPT021_BH106_260419_0.2 | Hexavalent Chromium | 18540-29-9 | 13.6 % | 58-114% | Recovery less than lower data quality objective |

Regular Sample Surrogates

Sub-Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--------------------------------|----------------------|------------------|----------------------|------------|-------|----------|--|
| Samples Submitted | | | | | | | |
| EP080S: TPH(V)/BTEX Surrogates | EM1906206-036 | QC568_260419 | 4-Bromofluorobenzene | 460-00-4 | 125 % | 56-124 % | Recovery greater than upper data quality objective |

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|-----------------------------|-------|---------|----------|----------|--------------------------------|
| | QC | Regular | Actual | Expected | |
| Method | | | | | |
| Matrix Spikes (MS) | | | | | |
| Total Fluoride | 1 | 21 | 4.76 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|------------------------------------|-------|---------|----------|----------|--------------------------------|
| | QC | Regular | Actual | Expected | |
| Method | | | | | |
| Laboratory Duplicates (DUP) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 2 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | 0 | 5 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 1 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 11 | 0.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| PAH/Phenols (GC/MS - SIM) | 0 | 2 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | 0 | 5 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | 0 | 1 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | 0 | 11 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|--------------|--------------------------|--------------------|------------|---------------|------------------|------------|--------------------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA001) | 26-Apr-2019 | 01-May-2019 | 03-May-2019 | ✔ | 01-May-2019 | 01-May-2019 | ✔ | |
| CPT018_BH06_260419_0.2, | | | | | | | | CPT018_BH06_260419_2.5, |
| CPT020_BH104_260419_0.2, | | | | | | | | CPT020_BH104_260419_1.5, |
| CPT018_BH103_260419_0.2, | | | | | | | | CPT018_BH103_260419_1.0, |
| CPT020_BH105_260419_0.5, | | | | | | | | CPT020_BH105_260419_1.5, |
| CPT021_BH106_260419_0.2, | | | | | | | | CPT021_BH106_260419_1.0, |
| QC157_260419, | QC158_260419 | | | | | | | |
| EA033-A: Actual Acidity | | | | | | | | |
| 80* dried soil (EA033) | 26-Apr-2019 | 02-May-2019 | 25-Apr-2020 | ✔ | 02-May-2019 | 31-Jul-2019 | ✔ | |
| CPT018_BH06_260419_0.5, | | | | | | | | CPT018_BH06_260419_2.0, |
| CPT020_BH104_260419_0.5, | | | | | | | | CPT020_BH104_260419_1.5, |
| CPT018_BH103_260419_0.5, | | | | | | | | CPT018_BH103_260419_1.5, |
| CPT020_BH105_260419_0.5, | | | | | | | | CPT020_BH105_260419_1.5, |
| CPT021_BH106_260419_0.5, | | | | | | | | CPT021_BH106_260419_1.5 |
| EA033-B: Potential Acidity | | | | | | | | |
| 80* dried soil (EA033) | 26-Apr-2019 | 02-May-2019 | 25-Apr-2020 | ✔ | 02-May-2019 | 31-Jul-2019 | ✔ | |
| CPT018_BH06_260419_0.5, | | | | | | | | CPT018_BH06_260419_2.0, |
| CPT020_BH104_260419_0.5, | | | | | | | | CPT020_BH104_260419_1.5, |
| CPT018_BH103_260419_0.5, | | | | | | | | CPT018_BH103_260419_1.5, |
| CPT020_BH105_260419_0.5, | | | | | | | | CPT020_BH105_260419_1.5, |
| CPT021_BH106_260419_0.5, | | | | | | | | CPT021_BH106_260419_1.5 |
| EA033-C: Acid Neutralising Capacity | | | | | | | | |
| 80* dried soil (EA033) | 26-Apr-2019 | 02-May-2019 | 25-Apr-2020 | ✔ | 02-May-2019 | 31-Jul-2019 | ✔ | |
| CPT018_BH06_260419_0.5, | | | | | | | | CPT018_BH06_260419_2.0, |
| CPT020_BH104_260419_0.5, | | | | | | | | CPT020_BH104_260419_1.5, |
| CPT018_BH103_260419_0.5, | | | | | | | | CPT018_BH103_260419_1.5, |
| CPT020_BH105_260419_0.5, | | | | | | | | CPT020_BH105_260419_1.5, |
| CPT021_BH106_260419_0.5, | | | | | | | | CPT021_BH106_260419_1.5 |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA033-D: Retained Acidity | | | | | | | | |
| 80* dried soil (EA033)
CPT018_BH06_260419_0.5,
CPT020_BH104_260419_0.5,
CPT018_BH103_260419_0.5,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.5, | CPT018_BH06_260419_2.0,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.5,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.5 | 26-Apr-2019 | 02-May-2019 | 25-Apr-2020 | ✓ | 02-May-2019 | 31-Jul-2019 | ✓ |
| EA033-E: Acid Base Accounting | | | | | | | | |
| 80* dried soil (EA033)
CPT018_BH06_260419_0.5,
CPT020_BH104_260419_0.5,
CPT018_BH103_260419_0.5,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.5, | CPT018_BH06_260419_2.0,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.5,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.5 | 26-Apr-2019 | 02-May-2019 | 25-Apr-2020 | ✓ | 02-May-2019 | 31-Jul-2019 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC157_260419,
QC566_260419,
QC568_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC158_260419,
QC567_260419,
QC569_260419 | 26-Apr-2019 | ---- | ---- | ---- | 01-May-2019 | 10-May-2019 | ✓ |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005T)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC157_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC158_260419 | 26-Apr-2019 | 01-May-2019 | 23-Oct-2019 | ✓ | 01-May-2019 | 23-Oct-2019 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC157_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC158_260419 | 26-Apr-2019 | 01-May-2019 | 24-May-2019 | ✓ | 02-May-2019 | 24-May-2019 | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG048G)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC157_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC158_260419 | 26-Apr-2019 | 01-May-2019 | 24-May-2019 | ✓ | 01-May-2019 | 08-May-2019 | ✓ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK026SF)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC157_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC158_260419 | 26-Apr-2019 | 01-May-2019 | 10-May-2019 | ✓ | 02-May-2019 | 15-May-2019 | ✓ |
| EK040T: Fluoride Total | | | | | | | | |
| Soil Glass Jar - Unpreserved (EK040T)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC157_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC158_260419 | 26-Apr-2019 | 01-May-2019 | 24-May-2019 | ✓ | 02-May-2019 | 24-May-2019 | ✓ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP066-EM)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC157_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC158_260419 | 26-Apr-2019 | 01-May-2019 | 10-May-2019 | ✓ | 02-May-2019 | 10-Jun-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
QC157_260419, | QC158_260419 | 26-Apr-2019 | 26-Apr-2019 | 03-May-2019 | ✓ | 01-May-2019 | 03-May-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0 | 26-Apr-2019 | 30-Apr-2019 | 03-May-2019 | ✓ | 01-May-2019 | 03-May-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP074H: Naphthalene | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
QC157_260419, | QC158_260419 | 26-Apr-2019 | 26-Apr-2019 | 03-May-2019 | ✓ | 01-May-2019 | 03-May-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0 | 26-Apr-2019 | 30-Apr-2019 | 03-May-2019 | ✓ | 01-May-2019 | 03-May-2019 | ✓ |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT)
QC157_260419, | QC158_260419 | 26-Apr-2019 | 26-Apr-2019 | 03-May-2019 | ✓ | 01-May-2019 | 03-May-2019 | ✓ |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0 | 26-Apr-2019 | 30-Apr-2019 | 03-May-2019 | ✓ | 01-May-2019 | 03-May-2019 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC157_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC158_260419 | 26-Apr-2019 | 01-May-2019 | 10-May-2019 | ✓ | 02-May-2019 | 10-Jun-2019 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC157_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC158_260419 | 26-Apr-2019 | 01-May-2019 | 10-May-2019 | ✓ | 02-May-2019 | 10-Jun-2019 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC157_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC158_260419 | 26-Apr-2019 | 01-May-2019 | 10-May-2019 | ✓ | 02-May-2019 | 10-Jun-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|--|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC157_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC158_260419 | 26-Apr-2019 | 01-May-2019 | 10-May-2019 | ✔ | 02-May-2019 | 10-Jun-2019 | ✔ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC157_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC158_260419 | 26-Apr-2019 | 01-May-2019 | 10-May-2019 | ✔ | 02-May-2019 | 10-Jun-2019 | ✔ |
| Soil Glass Jar - Unpreserved (EP074-UT)
QC157_260419, | QC158_260419 | 26-Apr-2019 | 26-Apr-2019 | 03-May-2019 | ✔ | 01-May-2019 | 03-May-2019 | ✔ |
| Soil Glass Jar - Unpreserved (EP080)
CPT018_BH06_260419_0.2,
CPT020_BH104_260419_0.2,
CPT018_BH103_260419_0.2,
CPT020_BH105_260419_0.5,
CPT021_BH106_260419_0.2,
QC566_260419,
QC568_260419, | CPT018_BH06_260419_2.5,
CPT020_BH104_260419_1.5,
CPT018_BH103_260419_1.0,
CPT020_BH105_260419_1.5,
CPT021_BH106_260419_1.0,
QC567_260419,
QC569_260419 | 26-Apr-2019 | 30-Apr-2019 | 10-May-2019 | ✔ | 01-May-2019 | 10-May-2019 | ✔ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-EM) | | 26-Apr-2019 | 01-May-2019 | 10-May-2019 | ✔ | 02-May-2019 | 10-Jun-2019 | ✔ |
| CPT018_BH06_260419_0.2, | CPT018_BH06_260419_2.5, | | | | | | | |
| CPT020_BH104_260419_0.2, | CPT020_BH104_260419_1.5, | | | | | | | |
| CPT018_BH103_260419_0.2, | CPT018_BH103_260419_1.0, | | | | | | | |
| CPT020_BH105_260419_0.5, | CPT020_BH105_260419_1.5, | | | | | | | |
| CPT021_BH106_260419_0.2, | CPT021_BH106_260419_1.0, | | | | | | | |
| QC157_260419, | QC158_260419 | | | | | | | |
| Soil Glass Jar - Unpreserved (EP074-UT) | | 26-Apr-2019 | 26-Apr-2019 | 03-May-2019 | ✔ | 01-May-2019 | 03-May-2019 | ✔ |
| QC157_260419, | QC158_260419 | | | | | | | |
| Soil Glass Jar - Unpreserved (EP080) | | 26-Apr-2019 | 30-Apr-2019 | 10-May-2019 | ✔ | 01-May-2019 | 10-May-2019 | ✔ |
| CPT018_BH06_260419_0.2, | CPT018_BH06_260419_2.5, | | | | | | | |
| CPT020_BH104_260419_0.2, | CPT020_BH104_260419_1.5, | | | | | | | |
| CPT018_BH103_260419_0.2, | CPT018_BH103_260419_1.0, | | | | | | | |
| CPT020_BH105_260419_0.5, | CPT020_BH105_260419_1.5, | | | | | | | |
| CPT021_BH106_260419_0.2, | CPT021_BH106_260419_1.0, | | | | | | | |
| QC566_260419, | QC567_260419, | | | | | | | |
| QC568_260419, | QC569_260419 | | | | | | | |
| EP080: BTEXN | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP080) | | 26-Apr-2019 | 30-Apr-2019 | 10-May-2019 | ✔ | 01-May-2019 | 10-May-2019 | ✔ |
| QC566_260419, | QC567_260419, | | | | | | | |
| QC568_260419, | QC569_260419 | | | | | | | |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP066)
QC358_260419 | 26-Apr-2019 | 30-Apr-2019 | 03-May-2019 | ✓ | 02-May-2019 | 09-Jun-2019 | ✓ |
| EP068A: Organochlorine Pesticides (OC) | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP068)
QC358_260419 | 26-Apr-2019 | 30-Apr-2019 | 03-May-2019 | ✓ | 02-May-2019 | 09-Jun-2019 | ✓ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC358_260419 | 26-Apr-2019 | 30-Apr-2019 | 10-May-2019 | ✓ | 30-Apr-2019 | 10-May-2019 | ✓ |
| EP074E: Halogenated Aliphatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC358_260419 | 26-Apr-2019 | 30-Apr-2019 | 10-May-2019 | ✓ | 30-Apr-2019 | 10-May-2019 | ✓ |
| EP074F: Halogenated Aromatic Compounds | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC358_260419 | 26-Apr-2019 | 30-Apr-2019 | 10-May-2019 | ✓ | 30-Apr-2019 | 10-May-2019 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP074G: Trihalomethanes | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP074)
QC358_260419 | 26-Apr-2019 | 30-Apr-2019 | 10-May-2019 | ✓ | 30-Apr-2019 | 10-May-2019 | ✓ |
| EP075(SIM)A: Phenolic Compounds | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
QC358_260419 | 26-Apr-2019 | 30-Apr-2019 | 03-May-2019 | ✓ | 02-May-2019 | 09-Jun-2019 | ✓ |
| EP075(SIM)B: Polynuclear Aromatic Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP075(SIM))
QC358_260419 | 26-Apr-2019 | 30-Apr-2019 | 03-May-2019 | ✓ | 02-May-2019 | 09-Jun-2019 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC358_260419 | 26-Apr-2019 | 30-Apr-2019 | 03-May-2019 | ✓ | 02-May-2019 | 09-Jun-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC358_260419, QC458_260419 | 26-Apr-2019 | 30-Apr-2019 | 10-May-2019 | ✓ | 30-Apr-2019 | 10-May-2019 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC358_260419 | 26-Apr-2019 | 30-Apr-2019 | 03-May-2019 | ✓ | 02-May-2019 | 09-Jun-2019 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC358_260419, QC458_260419 | 26-Apr-2019 | 30-Apr-2019 | 10-May-2019 | ✓ | 30-Apr-2019 | 10-May-2019 | ✓ |
| EP080: BTEXN | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC358_260419, QC458_260419 | 26-Apr-2019 | 30-Apr-2019 | 10-May-2019 | ✓ | 30-Apr-2019 | 10-May-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | Quality Control Specification | |
|---|----------|-------|---------|----------|----------|-------------------------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | | Evaluation |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 2 | 17 | 11.76 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 3 | 25 | 12.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 3 | 21 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 3 | 21 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 13 | 15.38 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 13 | 15.38 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 13 | 15.38 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 19 | 10.53 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 4 | 25 | 16.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 21 | 9.52 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Chromium Suite for Acid Sulphate Soils | EA033 | 1 | 17 | 5.88 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 25 | 8.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 21 | 9.52 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 19 | 5.26 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Method Blanks (MB) - Continued | | | | | | | |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 25 | 8.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 21 | 4.76 | 5.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 13 | 7.69 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 13 | 7.69 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 13 | 7.69 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 19 | 5.26 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|----------------------------------|------------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 2 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | EP068 | 0 | 5 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 1 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 11 | 0.00 | 10.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 18 | 11.11 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 7 | 14.29 | 10.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 2 | 50.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | EP068 | 1 | 5 | 20.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 1 | 100.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 7 | 14.29 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 1 | 2 | 50.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | EP068 | 1 | 5 | 20.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Polychlorinated Biphenyls (PCB) | EP066 | 1 | 1 | 100.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 7 | 14.29 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | 0 | 2 | 0.00 | 5.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | EP068 | 0 | 5 | 0.00 | 5.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |

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 Work Order : EM1906206
 Client : AECOM Australia Pty Ltd
 Project : 60592634



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | Evaluation | Quality Control Specification |
|---------------------------------|--------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | | |
| | | | | | | | |
| Matrix Spikes (MS) - Continued | | | | | | | |
| Polychlorinated Biphenyls (PCB) | EP066 | 0 | 1 | 0.00 | 5.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 11 | 0.00 | 5.00 | ✖ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds | EP074 | 1 | 7 | 14.29 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Chromium Suite for Acid Sulphate Soils | EA033 | SOIL | In house: Referenced to Ahern et al 2004. This method covers the determination of Chromium Reducible Sulfur (SCR); pHKCl; titratable actual acidity (TAA); acid neutralising capacity by back titration (ANC); and net acid soluble sulfur (SNAS) which incorporates peroxide sulfur. It applies to soils and sediments (including sands) derived from coastal regions. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5. |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |

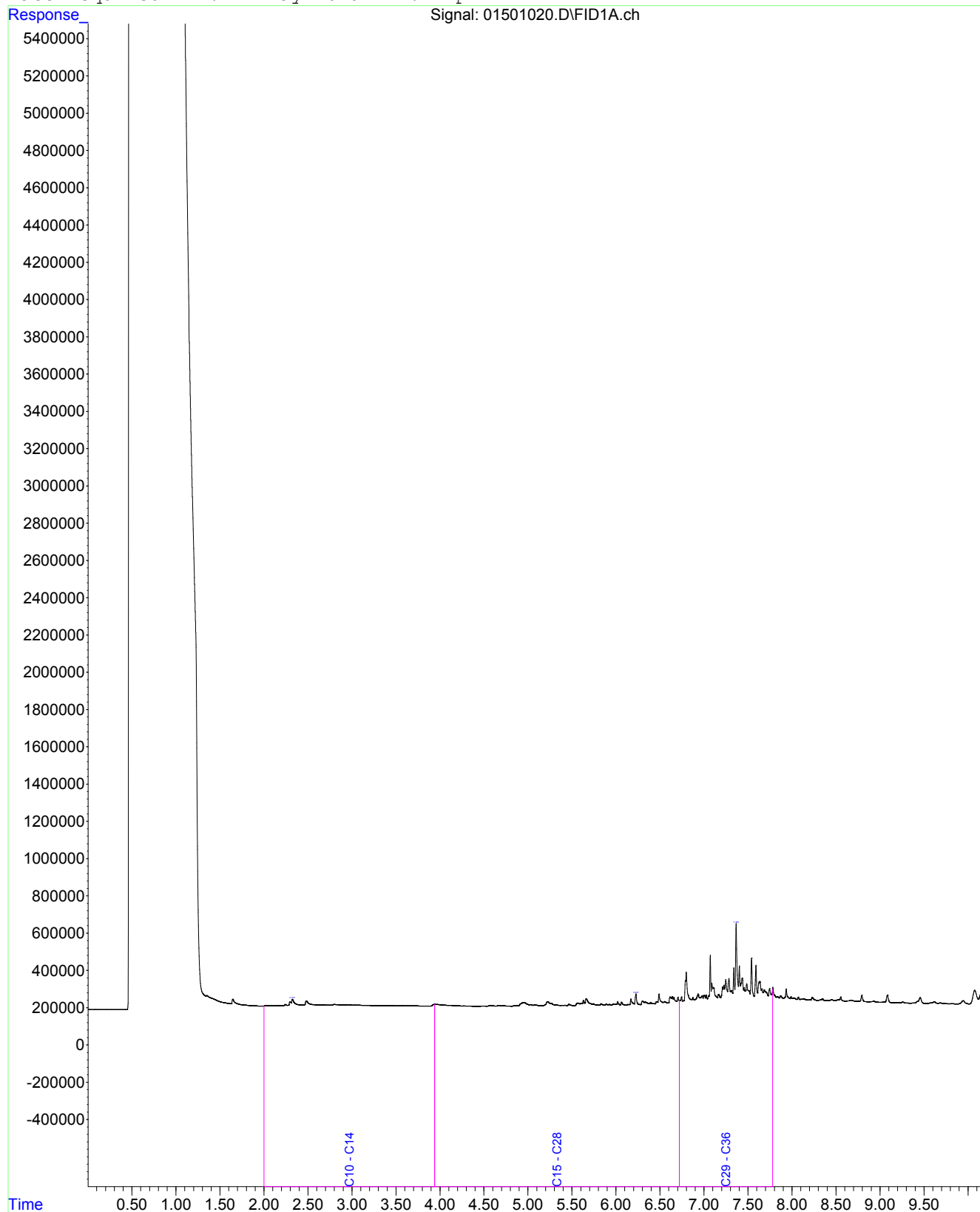


| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|--|
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| TRH Volatiles/BTEX | EP080 | SOIL | In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013. |
| Polychlorinated Biphenyls (PCB) | EP066 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Pesticides by GCMS | EP068 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Volatile Organic Compounds | EP074 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| PAH/Phenols (GC/MS - SIM) | EP075(SIM) | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Preparation Methods | Method | Matrix | Method Descriptions |
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |

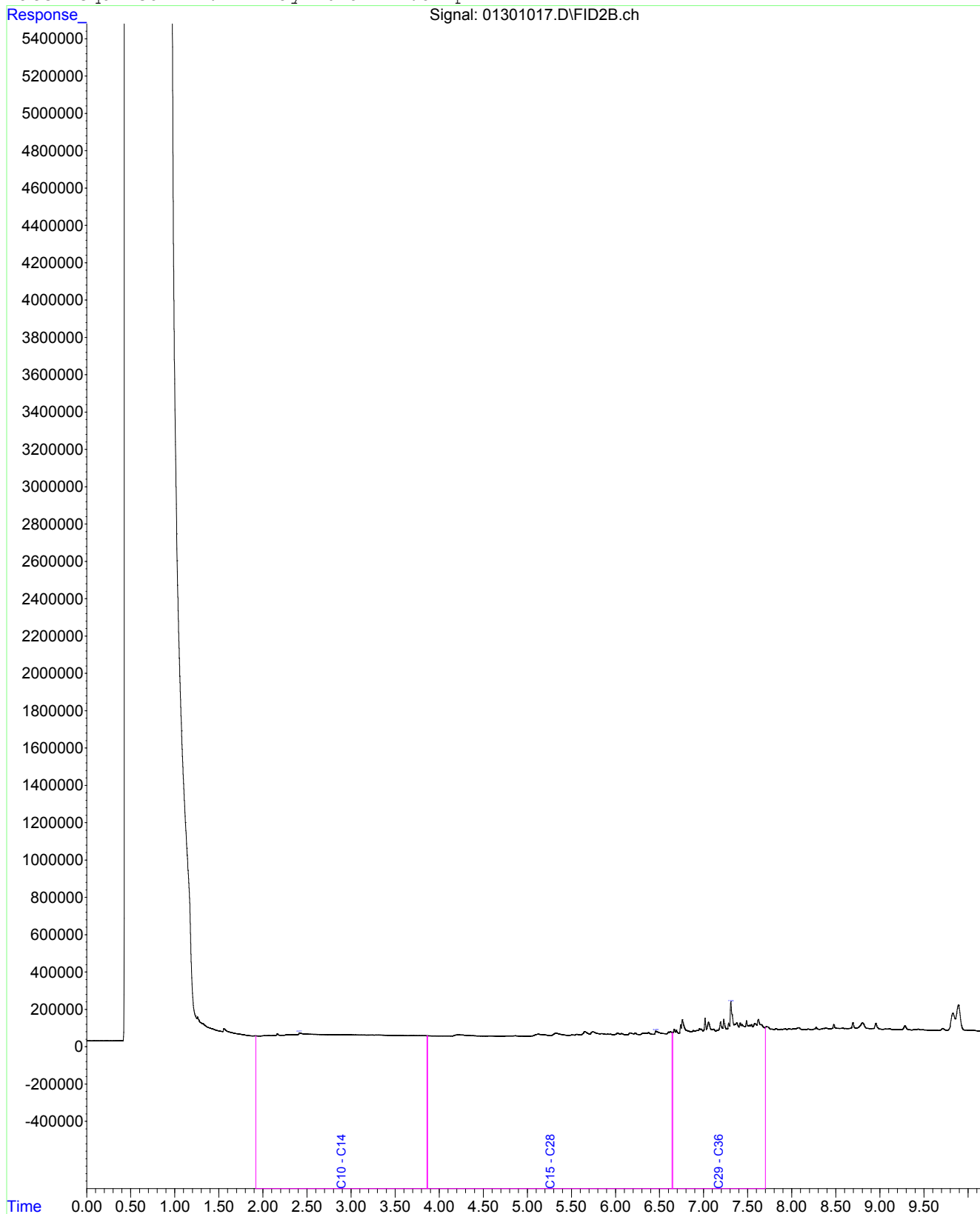


| Preparation Methods | Method | Matrix | Method Descriptions |
|--|----------|--------|---|
| Drying at 85 degrees, bagging and labelling (ASS) | EN020PR | SOIL | In house |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils for Purge and Trap | ORG16 | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |

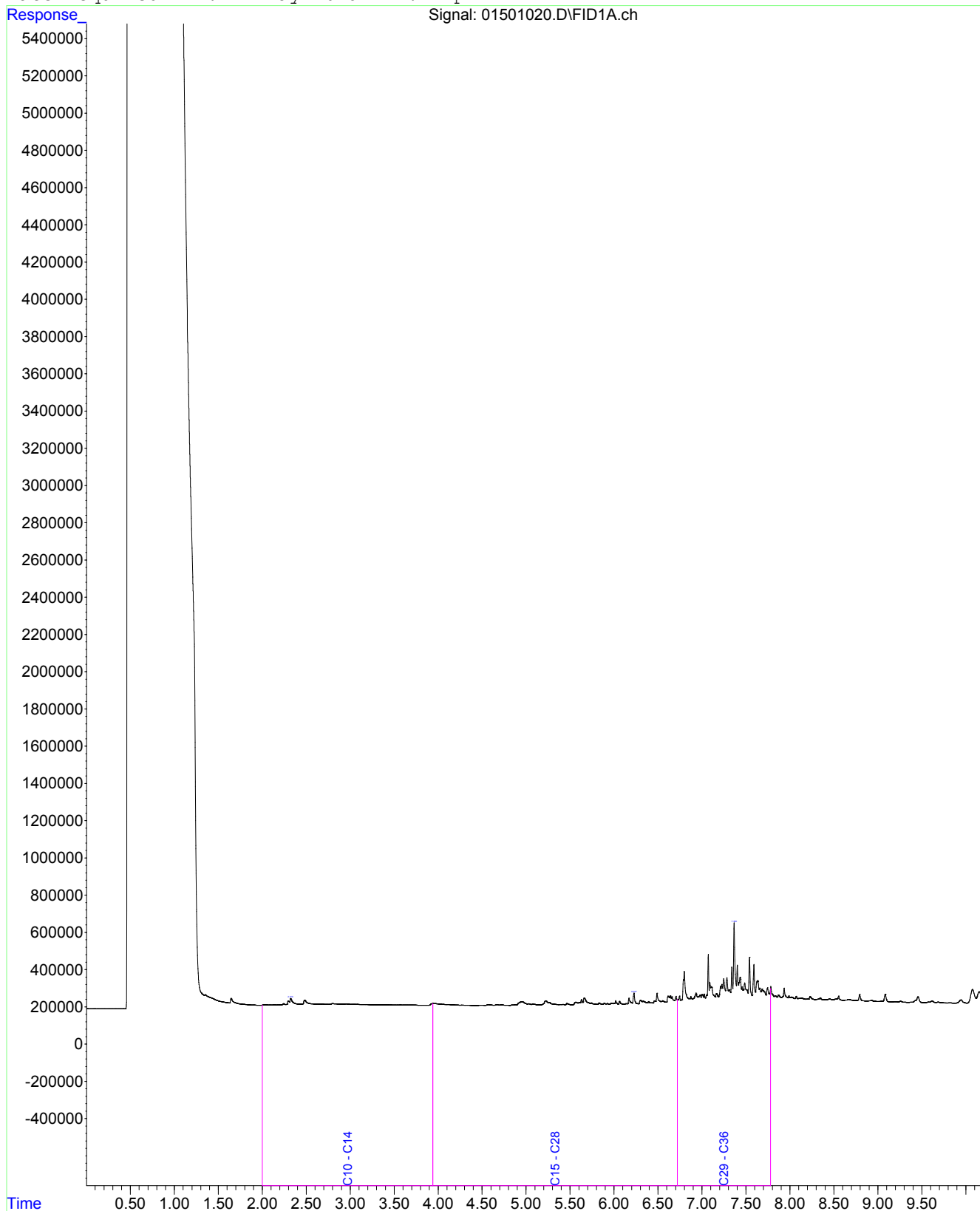
Fraction Scheme : Standard
Data File : 01501020.D
Laboratory Number: EM1906206-007
Sample ID : CPT020_BH104_260419_0.2
Date Acquired : 2 May 2019 1:42 pm



Fraction Scheme : Standard
Data File : 01301017.D
Laboratory Number: EM1906206-001
Sample ID : CPT018_BH06_260419_0.2
Date Acquired : 2 May 2019 12:54 pm



Fraction Scheme : Standard
Data File : 01501020.D
Laboratory Number: EM1906206-007
Sample ID : CPT020_BH104_260419_0.2
Date Acquired : 2 May 2019 1:42 pm



**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : EM1906531**

| | | | |
|--------------|---|--------------|---|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia
3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Page | : 1 of 3 |
| Order number | : ---- | Quote number | : EP2016AECOMAU0014 (EN/096/18) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : ---- | | |
| Sampler | : | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 26-Apr-2019 17:30 | Issue Date | : 03-May-2019 |
| Client Requested Due Date | : 07-May-2019 | Scheduled Reporting Date | : 07-May-2019 |

Delivery Details

| | | | |
|----------------------|-------------------|------------------------------------|-----------------|
| Mode of Delivery | : Samples On Hand | Security Seal | : Not Available |
| No. of coolers/boxes | : ---- | Temperature | : ---- |
| Receipt Detail | : | No. of samples received / analysed | : 1 / 1 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- This is a rebatch of EM1906206.
- Please be aware that APHA recommends samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

☐ **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM1906531-001 : [26-Apr-2019] : CPT018_BH06_260419_0.2

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | SOIL - EG005C
Leachable Metals by ICPAES | SOIL - EN60a
ASLP Leachate Procedure |
|----------------------|-----------------------------|-------------------------|---|---|
| EM1906531-001 | 26-Apr-2019 00:00 | CPT018_BH06_260419_0... | ☐ | ☐ |

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.



Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email

AP_CustomerService.ANZ@aecom.com

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

Email

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- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

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- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

Email

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Environmental Division
Melbourne
Work Order Reference
EM1906531

CS Contact:
Additional Information:

Telephone : + 61-3-8549 9800

MEFM (47/3)

[REDACTED]

From: [REDACTED]<[REDACTED]@aecom.com>
Sent: Friday, 3 May 2019 11:28 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: RESULTS & EDD for ALS Workorder : EM1906206 | Overall Description: GIJPP EES Fieldwork

Hi [REDACTED]

Can you please undertake leachate analysis (ASLP) for the following? At 2days TAT. Thanks!

- CPT018_BH06_260419_0.2 – Arsenic
- CPT018_BH06_260419_0.2 – Lead

[REDACTED]
Senior Environmental Engineer
[REDACTED]

[REDACTED]
[\[REDACTED\]@aecom.com](mailto:[REDACTED]@aecom.com)

AECOM

Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

[LinkedIn](#) [Twitter](#) [Facebook](#) [Instagram](#)

From: angel-no-reply@alsglobal.com [mailto:angel-no-reply@alsglobal.com]
Sent: Friday, 3 May 2019 11:10 AM
To: [REDACTED]
Subject: RESULTS & EDD for ALS Workorder : EM1906206 | Overall Description: GIJPP EES Fieldwork



Deliverables for ALS Workorder EM1906206

Project: 60592634

Overall Description: GIJPP EES Fieldwork

Dear [REDACTED]

Please find enclosed the following deliverables for **EM1906206**:

- EM1906206_0_COA.pdf

CERTIFICATE OF ANALYSIS

Work Order : **EM1906531**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592634
Order number : ----
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : EN/096/18
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 4
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : +6138549 9645
Date Samples Received : 26-Apr-2019 17:30
Date Analysis Commenced : 03-May-2019
Issue Date : 07-May-2019 17:37



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| Signatories | Position | Accreditation Category |
|--|-------------------------------------|---------------------------------------|
| [REDACTED] | Senior Inorganic Instrument Chemist | Melbourne Inorganics, Springvale, VIC |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- This is a rebatch of EM1906206.



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| | | | | | | | | | |
|--|------------|-----|------|-----------------------------|----------------------------|-------|-------|-------|-------|
| Sub-Matrix: ASLP LEACHATE
(Matrix: WATER) | | | | Client sample ID | CPT018_BH06_26041
9_0.2 | ---- | ---- | ---- | ---- |
| | | | | Client sampling date / time | 26-Apr-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1906531-001 | ----- | ----- | ----- | ----- |
| | | | | | Result | ---- | ---- | ---- | ---- |
| EG005(ED093)C: Leachable Metals by ICPAES | | | | | | | | | |
| Arsenic | 7440-38-2 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.1 | mg/L | | <0.1 | ---- | ---- | ---- | ---- |



| | | | | | | | | | |
|------------------------------------|------------|-----|---------|-----------------------------|----------------------------|-------|-------|-------|------|
| Sub-Matrix: SOIL
(Matrix: SOIL) | | | | Client sample ID | CPT018_BH06_26041
9_0.2 | ---- | ---- | ---- | ---- |
| | | | | Client sampling date / time | 26-Apr-2019 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1906531-001 | ----- | ----- | ----- | ----- | |
| | | | | Result | ---- | ---- | ---- | ---- | |
| EN60: ASLP Leaching Procedure | | | | | | | | | |
| Initial pH | ---- | 0.1 | pH Unit | 7.7 | ---- | ---- | ---- | ---- | |
| After HCl pH | ---- | 0.1 | pH Unit | 1.1 | ---- | ---- | ---- | ---- | |
| Extraction Fluid pH | ---- | 0.1 | pH Unit | 5.0 | ---- | ---- | ---- | ---- | |
| Final pH | ---- | 0.1 | pH Unit | 5.2 | ---- | ---- | ---- | ---- | |



Environmental

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|--|--------------------------------|---|
| Work Order | : EM1906531 | Page | : 1 of 3 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Project | : 60592634 | Date Samples Received | : 26-Apr-2019 |
| Order number | : ---- | Date Analysis Commenced | : 03-May-2019 |
| C-O-C number | : ---- | Issue Date | : 07-May-2019 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : EN/096/18 | | |
| No. of samples received | : 1 | | |
| No. of samples analysed | : 1 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

□□□□ □□ □□

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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□□□□ □□□□ □□□□

[REDACTED]

Senior Inorganic Instrument Chemist

Melbourne Inorganics, Springvale, VIC



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005(ED093)C: Leachable Metals by ICPAES (QC Lot: 2332159) | | | | | | | | | |
| EM1906311-001 | Anonymous | EG005C: Arsenic | 7440-38-2 | 0.1 | mg/L | <0.1 | <0.1 | 0.00 | No Limit |
| | | EG005C: Lead | 7439-92-1 | 0.1 | mg/L | 0.2 | 0.2 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|-----|------|-----------------------------|---------------------------------------|---------------------------|--------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
LowHigh | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG005(ED093)C: Leachable Metals by ICPAES (QCLot: 2332159) | | | | | | | | |
| EG005C: Arsenic | 7440-38-2 | 0.1 | mg/L | <0.1 | 1 mg/L | 95.0 | 89 | 119 |
| EG005C: Lead | 7439-92-1 | 0.1 | mg/L | <0.1 | 1 mg/L | 96.2 | 88 | 113 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

| | | | | Matrix Spike (MS) Report | | | |
|---|------------------|------------------|------------|--------------------------|--------------------------|---------------------|------|
| | | | | Spike
Concentration | Spike Recovery (%)
MS | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | | | Low | High |
| EG005(ED093)C: Leachable Metals by ICPAES (QCLot: 2332159) | | | | | | | |
| EM1906313-001 | Anonymous | EG005C: Arsenic | 7440-38-2 | 1 mg/L | 104 | 88 | 124 |
| | | EG005C: Lead | 7439-92-1 | 1 mg/L | # Not Determined | 86 | 118 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : **EM1906531**

Page : 1 of 4

Client : **AECOM Australia Pty Ltd**

Laboratory : Environmental Division Melbourne

Contact : [REDACTED]

Telephone : +6138549 9645

Project : 60592634

Date Samples Received : 26-Apr-2019

Site : ----

Issue Date : 07-May-2019

Sampler : ----

No. of samples received : 1

Order number : ----

No. of samples analysed : 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|---|----------------------|------------------|---------|------------|----------------|--------|---|
| Matrix Spike (MS) Recoveries | | | | | | | |
| EG005(ED093)C: Leachable Metals by ICPAES | EM1906313--001 | Anonymous | Lead | 7439-92-1 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EN60: ASLP Leaching Procedure | | | | | | | |
| Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN60a)
CPT018 BH06 260419 0.2 | 26-Apr-2019 | 03-May-2019 | 23-Oct-2019 | ✔ | ---- | ---- | ---- |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG005(ED093)C: Leachable Metals by ICPAES | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Unfiltered (EG005C)
CPT018_BH06_260419_0.2 | 03-May-2019 | 07-May-2019 | 30-Oct-2019 | ✓ | 07-May-2019 | 30-Oct-2019 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|----------------------------------|--------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Leachable Metals by ICPAES | EG005C | 1 | 6 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Leachable Metals by ICPAES | EG005C | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Leachable Metals by ICPAES | EG005C | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Leachable Metals by ICPAES | EG005C | 1 | 6 | 16.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|----------------------------|--------|--------|--|
| Leachable Metals by ICPAES | EG005C | SOIL | In house: referenced to APHA 3120; USEPA SW 846 - 6010: The ICPAES technique ionises leachate sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (2013) Schedule B(3) |

| Preparation Methods | Method | Matrix | Method Descriptions |
|---|--------|--------|---|
| Digestion for Total Recoverable Metals in TCLP Leachate | EN25C | SOIL | In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3) |
| ASLP for Non & Semivolatile Analytes | EN60a | SOIL | In house QWI-EN/60 referenced to AS4439.3 Preparation of Leachates |



CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLAREMONT 5/1 Burnside Road, Burnside SA 5065
Ph: 08 9162 5130 E: adelaide@alsglobal.com

CHURCHMAN 2 BVP Street, Sturtford QLD 4053
Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

GLADSTONE 48 Callendean Drive, Gladstone QLD 4680
Ph: 07 4978 7944 E: ALServito.Gladstone@alsglobal.com

CLAREMONT Unit 2/20 Caterpillar Drive, Papua QLD 4740
Ph: 07 4952 5795 E: ALServito.Melbourne@alsglobal.com

CHURCHMAN 2-4 Westall Road, Springvale VIC 3171
Ph: 03 8549 9000 E: samples.melbourne@alsglobal.com

GLADSTONE 1/20 Sydney Road, Mudgee NSW 2850
Ph: 02 6372 6735 E: mudgee.mel@alsglobal.com

CLAREMONT LE 5685 Maitland Road, Mayfield West NSW 2304
Ph: 02 4014 2600 E: samples.newcastle@alsglobal.com

CHURCHMAN 4/13 Geary Place, North Nowra NSW 2541
Ph: 02 4423 2063 E: nowra@alsglobal.com

GLADSTONE 1/10 Hod Way, Mudgee WA 6090
Ph: 08 9209 7665 E: samples.perth@alsglobal.com

CLAREMONT 277-289 Woodpark Road, Smithfield NSW 2164
Ph: 02 8784 8355 E: samples.sydne@alsglobal.com

CHURCHMAN 14-15 Denma Court, Boro QLD 4818
Ph: 07 4756 0600 E: ALServito.Townsville@alsglobal.com

GLADSTONE 1/19-21 Ralph Black Drive, Nth Wollongong NSW 2500
Ph: 02 4225 3125 E: wollongong@alsglobal.com

TURNAROUND REQUIREMENTS:

☐ Standard TAT (List due date):
(Standard TAT may be longer for some tests)
e.g. Ultra Trace Organics

☐ Non Standard or urgent TAT (L)

ALS QUOTE NO.: **ME/155/1907**

COUNTRY OF ORIGIN:

CONTACT PH: [REDACTED]

SAMPLER MOBILE: [REDACTED]

EDD FORMAT (or default):

DATE/TIME:

RELINQUISHED BY:

COE Emailled to ALS? (YES / NO)

Email Reports to (will default to PM if no other addresses are listed):

Email Invoice to (will default to PM if no other addresses are listed):

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comment:

INQUIRED BY: **manu (me)**

DATE/TIME: **1/3, 14.10**

RECEIVED BY: **manu (me)**

TIME: **1/3, 14.10**

Telephone: +61-3-9549 9600

Environmental Division

Melbourne

Work Order Reference

EM1903075

Barcode

Telephone: +61-3-9549 9600

Comments on likely contaminant levels, dilutions, or samples requiring specific OC analysis etc.

Additional Information

Comments on likely contaminant levels, dilutions, or samples requiring specific OC analysis etc.

Comments on likely contaminant levels, dilutions, or samples requiring specific OC analysis etc.

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Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Plastic; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; LI = Lugds Iodine Preserved Bottle; STT = Sterile Sodium Thiosulfate Preserved Bottles.



QUOTATION OF ANALYSIS

ME/155/19 V3

| | | | |
|--------------------------------|------------------|-----------------|-------------------------|
| Company Name: | CEE CONSULTANTS | | |
| Contact: | | Date: | 04-Mar-2019 |
| Email Address: | | Quote Validity: | 22-Feb-2020 |
| Phone Number: | +61 03 9553 4787 | | From: Rosie Ker |
| Client Code (Office Use Only): | CEECON | | rosie.ker@ALSGlobal.com |

Project Scope / Service Details

| | | | |
|------------------------------------|---------------------|---------------------|-----------------------|
| Client Reference/Project: | Sediment Analysis | | |
| Sample No/Type/Batch size: | 12 Sediments | | |
| Quoted Turnaround (working days): | 5 | | |
| Surcharges for fast TAT if needed: | One day: Rates +40% | Two day: Rates +20% | Three day: Rates +10% |

Tailored Analytical Services & Charges: SEDIMENT

| Parameter | ALS Code | Technique/
Method
Reference | Limit Of
Reporting
(LOR) | No. | Price per
Sample (\$) | Total (\$) |
|--|--------------------|---|--------------------------------|-----|--------------------------|------------|
| Organotins | EP090
(solids) | USEPA 8270D | 0.5 - 1 µgSn/kg | 12 | | |
| Total Mercury by FIMS - Low
Level (SOLID) | EG035T-LL | APHA 3112 Hg -
B | 0.01 mg/kg | 12 | | |
| Total Metals in Sediments
by ICPMS (NODG) | EG020-SD | USEPA 6020 | 0.1 - 10 mg/kg | 12 | | |
| Particle Sizing with
Hydrometer + Soil Particle
Density | EA150H/EA
152 | AS1289.3.6.3 -
2003, AS
1289.3.5.1-
2006 | 1 %, 0.01 g/cm3 | 12 | | |
| Total Iron in Sediments by
ICPAES (NODG) | EG005-SD | USEPA 6010 | 50 mg/kg | 12 | | |
| Total Organic Carbon (TOC)
in Soil | EP003 | In house | 0.02 % | 12 | | |
| OC Pesticides (Ultratrace) | EP131A | USEPA 8081 /
8082 | 0.25 - 0.50 µg/kg | 12 | | |
| PCB's (Ultratrace) | EP131B | USEPA 8081 /
8082 | 5.0 µg/kg | 12 | | |
| Ultra-trace PAHs in
Sediments | EP132B-SD | USEPA 8270D | 4 - 5 µg/kg | 12 | | |
| TRH(V)/BTEXN in Sediments | EP080-SD | USEPA 8260B | 0.2 - 3 mg/kg | 12 | | |
| TRH ultra trace in sediments | EP071 - SD | USEPA 8270D | 3 - 5 mg/kg | 12 | | |
| PFAS - Full Suite (28
analytes) | EP231X
(solids) | In house
(LC/MS/MS) | 0.0002 - 0.001
mg/kg | 12 | | |
| Total cost per sample (Excluding GST) | | | | | | |
| Total cost for this table based on sample numbers provided (Excluding GST) | | | | | | |

Administration Charges

An administration fee of \$40.00 (excl. GST) is charged per analytical report produced (ie. per ALS work order). Additional administrative charges may apply for subsequent report generation.

CERTIFICATE OF ANALYSIS

| | |
|---|--|
| Work Order : EM1903075
Client : CEE CONSULTANTS
Contact : [REDACTED]
Address : Unit 4, 150 Chesterville Rd,
Cheltenham VIC 3192
Telephone : +61 03 9553 4787
Project : CRIB POINT
Order number :
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : ME/155/19 V3
No. of samples received : 12
No. of samples analysed : 12 | Page : 1 of 24
Laboratory : Environmental Division Melbourne
Contact : Customer Services EM
Address : 4 Westall Rd Springvale VIC Australia 3171
Telephone : +61-3-8549 9600
Date Samples Received : 01-Mar-2019 14:10
Date Analysis Commenced : 07-Mar-2019
Issue Date : 19-Mar-2019 08:46 |
|---|--|



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| Signatories | Position | Accreditation Category |
|--|----------------------------------|---|
| [REDACTED] | Laboratory Coordinator (2IC) | Newcastle - Inorganics, Mayfield West, NSW |
| [REDACTED] | Organic Coordinator | Sydney Organics, Smithfield, NSW |
| [REDACTED] | | Sydney Organics, Smithfield, NSW |
| [REDACTED] | Analyst | Sydney Inorganics, Smithfield, NSW |
| [REDACTED] | Organic Chemist | Brisbane Organics, Stafford, QLD |
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |



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The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EP071: Poor spike recovery for EM1903075 due to matrix interferences(confirmed by re-extraction and re-analysis.).
- EP131B : Particular samples raised LOR due to high amount of moistures is present.
- EP090 Organotin: Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly and surrogate recovery has not been determined.



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB1 a | CPB1 b | CPB1 c | CPB2 a | CPB2 bS1 |
|--|------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-001 | EM1903075-002 | EM1903075-003 | EM1903075-004 | EM1903075-005 |
| | | | | | Result | Result | Result | Result | Result |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 0.1 | % | | 22.4 | 30.4 | 31.0 | 32.7 | 52.0 |
| EA150: Particle Sizing | | | | | | | | | |
| +75µm | ---- | 1 | % | | 96 | 90 | 86 | 88 | 90 |
| +150µm | ---- | 1 | % | | 89 | 65 | 64 | 65 | 69 |
| +300µm | ---- | 1 | % | | 64 | 26 | 45 | 40 | 46 |
| +425µm | ---- | 1 | % | | 40 | 15 | 32 | 27 | 34 |
| +600µm | ---- | 1 | % | | 16 | 9 | 20 | 16 | 24 |
| +1180µm | ---- | 1 | % | | 4 | 6 | 14 | 6 | 14 |
| +2.36mm | ---- | 1 | % | | 2 | 5 | 11 | 2 | 7 |
| +4.75mm | ---- | 1 | % | | <1 | 4 | 6 | <1 | 3 |
| +9.5mm | ---- | 1 | % | | <1 | 1 | 1 | <1 | <1 |
| +19.0mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| +37.5mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| +75.0mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| EA150: Soil Classification based on Particle Size | | | | | | | | | |
| Clay (<2 µm) | ---- | 1 | % | | 2 | 5 | 8 | 8 | 8 |
| Silt (2-60 µm) | ---- | 1 | % | | 1 | 3 | 4 | 1 | 1 |
| Sand (0.06-2.00 mm) | ---- | 1 | % | | 95 | 87 | 76 | 88 | 82 |
| Gravel (>2mm) | ---- | 1 | % | | 2 | 5 | 12 | 3 | 9 |
| Cobbles (>6cm) | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| EA152: Soil Particle Density | | | | | | | | | |
| Soil Particle Density (Clay/Silt/Sand) | ---- | 0.01 | g/cm3 | | 2.58 | 2.56 | 2.53 | 2.58 | 2.58 |
| EG005(ED093)-SD: Total Metals in Sediments by ICP-AES | | | | | | | | | |
| Iron | 7439-89-6 | 50 | mg/kg | | 8360 | 7700 | 8960 | 11300 | 14600 |
| EG020-SD: Total Metals in Sediments by ICPMS | | | | | | | | | |
| Antimony | 7440-36-0 | 0.50 | mg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Arsenic | 7440-38-2 | 1.00 | mg/kg | | 13.6 | 12.2 | 12.5 | 17.8 | 8.00 |
| Cadmium | 7440-43-9 | 0.1 | mg/kg | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chromium | 7440-47-3 | 1.0 | mg/kg | | 4.9 | 6.3 | 8.5 | 8.7 | 5.1 |
| Copper | 7440-50-8 | 1.0 | mg/kg | | 1.3 | 1.3 | 18.8 | 1.8 | 1.2 |
| Cobalt | 7440-48-4 | 0.5 | mg/kg | | 1.4 | 1.5 | 1.9 | 1.9 | 1.0 |
| Lead | 7439-92-1 | 1.0 | mg/kg | | 1.6 | 2.0 | 2.9 | 2.6 | 1.7 |
| Manganese | 7439-96-5 | 10 | mg/kg | | 38 | 35 | 36 | 43 | 23 |
| Nickel | 7440-02-0 | 1.0 | mg/kg | | 1.7 | 2.3 | 3.1 | 3.0 | 1.9 |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB1 a | CPB1 b | CPB1 c | CPB2 a | CPB2 bS1 |
|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-001 | EM1903075-002 | EM1903075-003 | EM1903075-004 | EM1903075-005 |
| | | | | | Result | Result | Result | Result | Result |
| EG020-SD: Total Metals in Sediments by ICPMS - Continued | | | | | | | | | |
| Selenium | 7782-49-2 | 0.1 | mg/kg | | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 |
| Silver | 7440-22-4 | 0.1 | mg/kg | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Vanadium | 7440-62-2 | 2.0 | mg/kg | | 27.3 | 26.5 | 33.1 | 37.8 | 18.9 |
| Zinc | 7440-66-6 | 1.0 | mg/kg | | 8.7 | 12.4 | 11.2 | 9.3 | 5.7 |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) | | | | | | | | | |
| Mercury | 7439-97-6 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | <0.01 | 0.02 |
| EP003: Total Organic Carbon (TOC) in Soil | | | | | | | | | |
| Total Organic Carbon | ---- | 0.02 | % | | 0.13 | 0.29 | 0.22 | 0.24 | 0.22 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 3 | mg/kg | | <3 | 5 | 3 | 4 | 3 |
| >C16 - C34 Fraction | ---- | 3 | mg/kg | | 4 | 16 | <3 | 13 | 12 |
| >C34 - C40 Fraction | ---- | 5 | mg/kg | | <5 | 5 | <5 | <5 | <5 |
| >C10 - C40 Fraction (sum) | ---- | 3 | mg/kg | | 4 | 26 | 3 | 17 | 15 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 3 | mg/kg | | <3 | 5 | 3 | 4 | 3 |
| EP080-SD / EP071-SD: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 3 | mg/kg | | <3 | <3 | <3 | <3 | <3 |
| C10 - C14 Fraction | ---- | 3 | mg/kg | | <3 | 4 | 6 | 3 | 3 |
| C15 - C28 Fraction | ---- | 3 | mg/kg | | 3 | 13 | <3 | 10 | 9 |
| C29 - C36 Fraction | ---- | 5 | mg/kg | | <5 | 7 | <5 | 6 | <5 |
| ^ C10 - C36 Fraction (sum) | ---- | 3 | mg/kg | | 3 | 24 | 6 | 19 | 12 |
| EP080-SD / EP071-SD: Total Recoverable Hydrocarbons | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 3 | mg/kg | | <3 | <3 | <3 | <3 | <3 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 3.0 | mg/kg | | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| EP080-SD: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Ethylbenzene | 100-41-4 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| ortho-Xylene | 95-47-6 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| ^ Sum of BTEX | ---- | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Naphthalene | 91-20-3 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB1 a | CPB1 b | CPB1 c | CPB2 a | CPB2 bS1 |
|--|----------------------|------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-001 | EM1903075-002 | EM1903075-003 | EM1903075-004 | EM1903075-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP090: Organotin Compounds | | | | | | | | | |
| Monobutyltin | 78763-54-9 | 1 | µgSn/kg | | <1 | 142 | <3 | <1 | <1 |
| Dibutyltin | 1002-53-5 | 1 | µgSn/kg | | <1 | 289 | 15 | <1 | <1 |
| Tributyltin | 56573-85-4 | 0.5 | µgSn/kg | | 1.4 | 4820 | 372 | <0.5 | 0.6 |
| EP131A: Organochlorine Pesticides | | | | | | | | | |
| Aldrin | 309-00-2 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| alpha-BHC | 319-84-6 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| beta-BHC | 319-85-7 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| delta-BHC | 319-86-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| 4,4`-DDD | 72-54-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| 4,4`-DDE | 72-55-9 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| 4,4`-DDT | 50-29-3 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dieldrin | 60-57-1 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| alpha-Endosulfan | 959-98-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| beta-Endosulfan | 33213-65-9 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Endosulfan sulfate | 1031-07-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| ^ Endosulfan (sum) | 115-29-7 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Endrin | 72-20-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Endrin aldehyde | 7421-93-4 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Endrin ketone | 53494-70-5 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Heptachlor | 76-44-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Heptachlor epoxide | 1024-57-3 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| gamma-BHC | 58-89-9 | 0.25 | µg/kg | | <0.25 | <0.25 | <0.25 | <0.25 | <0.25 |
| Methoxychlor | 72-43-5 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| cis-Chlordane | 5103-71-9 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| trans-Chlordane | 5103-74-2 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| ^ Total Chlordane (sum) | ---- | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Oxychlordane | 27304-13-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| EP131B: Polychlorinated Biphenyls (as Aroclors) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <6.2 |
| Aroclor 1016 | 12674-11-2 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <6.2 |
| Aroclor 1221 | 11104-28-2 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <6.2 |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB1 a | CPB1 b | CPB1 c | CPB2 a | CPB2 bS1 |
|--|-------------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-001 | EM1903075-002 | EM1903075-003 | EM1903075-004 | EM1903075-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP131B: Polychlorinated Biphenyls (as Aroclors) - Continued | | | | | | | | | |
| Aroclor 1232 | 11141-16-5 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <6.2 |
| Aroclor 1242 | 53469-21-9 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <6.2 |
| Aroclor 1248 | 12672-29-6 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <6.2 |
| Aroclor 1254 | 11097-69-1 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <6.2 |
| Aroclor 1260 | 11096-82-5 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <6.2 |
| EP132B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 5 | µg/kg | | <5 | 9 | <5 | <5 | <5 |
| 2-Methylnaphthalene | 91-57-6 | 5 | µg/kg | | <5 | <5 | <5 | <5 | <5 |
| Acenaphthylene | 208-96-8 | 4 | µg/kg | | <4 | <4 | <4 | <4 | <4 |
| Acenaphthene | 83-32-9 | 4 | µg/kg | | <4 | 8 | <4 | <4 | <4 |
| Fluorene | 86-73-7 | 4 | µg/kg | | <4 | 6 | <4 | <4 | <4 |
| Phenanthrene | 85-01-8 | 4 | µg/kg | | <4 | 24 | <4 | <4 | <4 |
| Anthracene | 120-12-7 | 4 | µg/kg | | <4 | <4 | <4 | <4 | <4 |
| Fluoranthene | 206-44-0 | 4 | µg/kg | | <4 | 32 | 11 | <4 | <4 |
| Pyrene | 129-00-0 | 4 | µg/kg | | <4 | 26 | 12 | <4 | <4 |
| Benzo(a)anthracene | 56-55-3 | 4 | µg/kg | | <4 | 11 | 8 | <4 | <4 |
| Chrysene | 218-01-9 | 4 | µg/kg | | <4 | 17 | 7 | <4 | <4 |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 4 | µg/kg | | <4 | 18 | 11 | <4 | <4 |
| Benzo(k)fluoranthene | 207-08-9 | 4 | µg/kg | | <4 | 7 | 4 | <4 | <4 |
| Benzo(e)pyrene | 192-97-2 | 4 | µg/kg | | <4 | 9 | 6 | <4 | <4 |
| Benzo(a)pyrene | 50-32-8 | 4 | µg/kg | | <4 | 12 | 10 | <4 | <4 |
| Perylene | 198-55-0 | 4 | µg/kg | | <4 | <4 | <4 | <4 | <4 |
| Benzo(g,h,i)perylene | 191-24-2 | 4 | µg/kg | | <4 | 8 | 7 | <4 | <4 |
| Dibenz(a,h)anthracene | 53-70-3 | 4 | µg/kg | | <4 | <4 | <4 | <4 | <4 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 4 | µg/kg | | <4 | 7 | 6 | <4 | <4 |
| Coronene | 191-07-1 | 5 | µg/kg | | <5 | <5 | <5 | <5 | <5 |
| ^ Sum of PAHs | ---- | 4 | µg/kg | | <4 | 194 | 82 | <4 | <4 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 4 | µg/kg | | <4 | 16 | 13 | <4 | <4 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 4 | µg/kg | | 5 | 18 | 15 | 5 | 5 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 4 | µg/kg | | 10 | 20 | 17 | 10 | 10 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | | | | |
|--|------------|--------|-------|------------------|---------------|---------------|---------------|---------------|
| Client sampling date / time | | | | CPB1 a | CPB1 b | CPB1 c | CPB2 a | CPB2 bS1 |
| Compound | | | | CAS Number | LOR | Unit | | |
| | | | | EM1903075-001 | EM1903075-002 | EM1903075-003 | EM1903075-004 | EM1903075-005 |
| | | | | Result | Result | Result | Result | Result |
| EP231A: Perfluoroalkyl Sulfonic Acids - Continued | | | | | | | | |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB1 a | CPB1 b | CPB1 c | CPB2 a | CPB2 bS1 |
|---|--------------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-001 | EM1903075-002 | EM1903075-003 | EM1903075-004 | EM1903075-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP231C: Perfluoroalkyl Sulfonamides - Continued | | | | | | | | | |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Sum of PFAS (WA DER List) | ---- | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| EP080-SD: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.2 | % | | 105 | 93.9 | 105 | 85.0 | 91.0 |
| Toluene-D8 | 2037-26-5 | 0.2 | % | | 117 | 104 | 112 | 93.2 | 99.7 |
| 4-Bromofluorobenzene | 460-00-4 | 0.2 | % | | 120 | 112 | 121 | 100 | 109 |
| EP090S: Organotin Surrogate | | | | | | | | | |
| Tripolytin | ---- | 0.5 | % | | 81.6 | Not Determined | 121 | 92.1 | 85.3 |
| EP131S: OC Pesticide Surrogate | | | | | | | | | |
| Dibromo-DDE | 21655-73-2 | 0.50 | % | | 39.7 | 43.9 | 42.8 | 47.4 | 39.5 |
| EP131T: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.5 | % | | 47.8 | 68.0 | 73.0 | 61.1 | 52.1 |
| EP132T: Base/Neutral Extractable Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 10 | % | | 116 | 76.5 | 124 | 106 | 116 |
| Anthracene-d10 | 1719-06-8 | 10 | % | | 115 | 94.4 | 108 | 95.6 | 102 |
| 4-Terphenyl-d14 | 1718-51-0 | 10 | % | | 110 | 91.8 | 98.8 | 90.1 | 119 |



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|---|------------|--------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB1 a | CPB1 b | CPB1 c | CPB2 a | CPB2 bS1 |
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-001 | EM1903075-002 | EM1903075-003 | EM1903075-004 | EM1903075-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | | 84.0 | 83.5 | 95.5 | 93.0 | 86.5 |
| 13C8-PFOA | ---- | 0.0002 | % | | 102 | 81.5 | 76.5 | 85.0 | 90.0 |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2 bS2 | CPB2 CD1 | CPB2 CD2 | NRA | NRB |
|--|------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-006 | EM1903075-007 | EM1903075-008 | EM1903075-009 | EM1903075-010 |
| | | | | | Result | Result | Result | Result | Result |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 0.1 | % | | 30.7 | 40.7 | 42.9 | 33.4 | 23.1 |
| EA150: Particle Sizing | | | | | | | | | |
| +75µm | ---- | 1 | % | | 94 | 90 | 90 | 96 | 98 |
| +150µm | ---- | 1 | % | | 78 | 57 | 68 | 92 | 98 |
| +300µm | ---- | 1 | % | | 55 | 40 | 46 | 76 | 75 |
| +425µm | ---- | 1 | % | | 40 | 26 | 32 | 58 | 36 |
| +600µm | ---- | 1 | % | | 28 | 16 | 22 | 44 | 15 |
| +1180µm | ---- | 1 | % | | 16 | 8 | 12 | 31 | 2 |
| +2.36mm | ---- | 1 | % | | 8 | 5 | 8 | 23 | <1 |
| +4.75mm | ---- | 1 | % | | 4 | 2 | 3 | 16 | <1 |
| +9.5mm | ---- | 1 | % | | <1 | <1 | <1 | 8 | <1 |
| +19.0mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| +37.5mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| +75.0mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| EA150: Soil Classification based on Particle Size | | | | | | | | | |
| Clay (<2 µm) | ---- | 1 | % | | 6 | 5 | 5 | 3 | 1 |
| Silt (2-60 µm) | ---- | 1 | % | | <1 | 3 | 4 | <1 | 1 |
| Sand (0.06-2.00 mm) | ---- | 1 | % | | 84 | 86 | 82 | 71 | 97 |
| Gravel (>2mm) | ---- | 1 | % | | 10 | 6 | 9 | 26 | 1 |
| Cobbles (>6cm) | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| EA152: Soil Particle Density | | | | | | | | | |
| Soil Particle Density (Clay/Silt/Sand) | ---- | 0.01 | g/cm3 | | 2.60 | 2.59 | 2.58 | 2.59 | 2.60 |
| EG005(ED093)-SD: Total Metals in Sediments by ICP-AES | | | | | | | | | |
| Iron | 7439-89-6 | 50 | mg/kg | | 9840 | 8910 | 7940 | 17700 | 14400 |
| EG020-SD: Total Metals in Sediments by ICPMS | | | | | | | | | |
| Antimony | 7440-36-0 | 0.50 | mg/kg | | <0.50 | <0.50 | <0.50 | 1.85 | <0.50 |
| Arsenic | 7440-38-2 | 1.00 | mg/kg | | 14.5 | 13.4 | 11.9 | 24.2 | 25.0 |
| Cadmium | 7440-43-9 | 0.1 | mg/kg | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chromium | 7440-47-3 | 1.0 | mg/kg | | 7.8 | 8.9 | 7.4 | 19.2 | 8.0 |
| Copper | 7440-50-8 | 1.0 | mg/kg | | 1.3 | 2.6 | 2.1 | 1.0 | <1.0 |
| Cobalt | 7440-48-4 | 0.5 | mg/kg | | 1.7 | 1.9 | 1.5 | 3.1 | 2.1 |
| Lead | 7439-92-1 | 1.0 | mg/kg | | 4.1 | 2.5 | 2.1 | 7.3 | 1.2 |
| Manganese | 7439-96-5 | 10 | mg/kg | | 40 | 36 | 37 | 44 | 60 |
| Nickel | 7440-02-0 | 1.0 | mg/kg | | 3.0 | 3.7 | 2.8 | 3.1 | 1.5 |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2 bS2 | CPB2 CD1 | CPB2 CD2 | NRA | NRB |
|--|-------------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-006 | EM1903075-007 | EM1903075-008 | EM1903075-009 | EM1903075-010 |
| | | | | | Result | Result | Result | Result | Result |
| EG020-SD: Total Metals in Sediments by ICPMS - Continued | | | | | | | | | |
| Selenium | 7782-49-2 | 0.1 | mg/kg | | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 |
| Silver | 7440-22-4 | 0.1 | mg/kg | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Vanadium | 7440-62-2 | 2.0 | mg/kg | | 31.5 | 30.4 | 27.1 | 296 | 56.6 |
| Zinc | 7440-66-6 | 1.0 | mg/kg | | 9.7 | 9.5 | 10.2 | 4.7 | 5.3 |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) | | | | | | | | | |
| Mercury | 7439-97-6 | 0.01 | mg/kg | | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| EP003: Total Organic Carbon (TOC) in Soil | | | | | | | | | |
| Total Organic Carbon | ---- | 0.02 | % | | 0.18 | 0.14 | 0.17 | 0.10 | 0.07 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 3 | mg/kg | | 3 | 15 | 5 | 3 | <3 |
| >C16 - C34 Fraction | ---- | 3 | mg/kg | | 12 | 45 | 23 | 10 | 3 |
| >C34 - C40 Fraction | ---- | 5 | mg/kg | | <5 | 13 | 8 | <5 | <5 |
| >C10 - C40 Fraction (sum) | ---- | 3 | mg/kg | | 15 | 73 | 36 | 13 | 3 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 3 | mg/kg | | 3 | 15 | 5 | 3 | <3 |
| EP080-SD / EP071-SD: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 3 | mg/kg | | <3 | <3 | <3 | <3 | <3 |
| C10 - C14 Fraction | ---- | 3 | mg/kg | | <3 | 8 | 4 | 3 | <3 |
| C15 - C28 Fraction | ---- | 3 | mg/kg | | 10 | 42 | 18 | 8 | <3 |
| C29 - C36 Fraction | ---- | 5 | mg/kg | | 5 | 17 | 10 | <5 | <5 |
| ^ C10 - C36 Fraction (sum) | ---- | 3 | mg/kg | | 15 | 67 | 32 | 11 | <3 |
| EP080-SD / EP071-SD: Total Recoverable Hydrocarbons | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 3 | mg/kg | | <3 | <3 | <3 | <3 | <3 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 3.0 | mg/kg | | <3.0 | <3.0 | <3.0 | <3.0 | <3.0 |
| EP080-SD: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Ethylbenzene | 100-41-4 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| ortho-Xylene | 95-47-6 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| ^ Sum of BTEX | ---- | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Naphthalene | 91-20-3 | 0.2 | mg/kg | | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2 bS2 | CPB2 CD1 | CPB2 CD2 | NRA | NRB |
|--|----------------------|------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-006 | EM1903075-007 | EM1903075-008 | EM1903075-009 | EM1903075-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP090: Organotin Compounds | | | | | | | | | |
| Monobutyltin | 78763-54-9 | 1 | µgSn/kg | | <1 | <1 | <1 | <1 | <1 |
| Dibutyltin | 1002-53-5 | 1 | µgSn/kg | | <1 | <1 | <1 | <1 | <1 |
| Tributyltin | 56573-85-4 | 0.5 | µgSn/kg | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EP131A: Organochlorine Pesticides | | | | | | | | | |
| Aldrin | 309-00-2 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| alpha-BHC | 319-84-6 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| beta-BHC | 319-85-7 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| delta-BHC | 319-86-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| 4,4`-DDD | 72-54-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| 4,4`-DDE | 72-55-9 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| 4,4`-DDT | 50-29-3 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dieldrin | 60-57-1 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| alpha-Endosulfan | 959-98-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| beta-Endosulfan | 33213-65-9 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Endosulfan sulfate | 1031-07-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| ^ Endosulfan (sum) | 115-29-7 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Endrin | 72-20-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Endrin aldehyde | 7421-93-4 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Endrin ketone | 53494-70-5 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Heptachlor | 76-44-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Heptachlor epoxide | 1024-57-3 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| gamma-BHC | 58-89-9 | 0.25 | µg/kg | | <0.25 | <0.25 | <0.25 | <0.25 | <0.25 |
| Methoxychlor | 72-43-5 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| cis-Chlordane | 5103-71-9 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| trans-Chlordane | 5103-74-2 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| ^ Total Chlordane (sum) | ---- | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Oxychlordane | 27304-13-8 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.50 | µg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| EP131B: Polychlorinated Biphenyls (as Aroclors) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ---- | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Aroclor 1016 | 12674-11-2 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Aroclor 1221 | 11104-28-2 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2 bS2 | CPB2 CD1 | CPB2 CD2 | NRA | NRB |
|--|-------------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-006 | EM1903075-007 | EM1903075-008 | EM1903075-009 | EM1903075-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP131B: Polychlorinated Biphenyls (as Aroclors) - Continued | | | | | | | | | |
| Aroclor 1232 | 11141-16-5 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Aroclor 1242 | 53469-21-9 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Aroclor 1248 | 12672-29-6 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Aroclor 1254 | 11097-69-1 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Aroclor 1260 | 11096-82-5 | 5.0 | µg/kg | | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| EP132B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 5 | µg/kg | | <5 | 5 | <5 | <5 | <5 |
| 2-Methylnaphthalene | 91-57-6 | 5 | µg/kg | | <5 | 8 | <5 | <5 | <5 |
| Acenaphthylene | 208-96-8 | 4 | µg/kg | | <4 | <4 | 16 | <4 | <4 |
| Acenaphthene | 83-32-9 | 4 | µg/kg | | <4 | <4 | <4 | <4 | <4 |
| Fluorene | 86-73-7 | 4 | µg/kg | | <4 | <4 | 5 | <4 | <4 |
| Phenanthrene | 85-01-8 | 4 | µg/kg | | <4 | <4 | 75 | <4 | <4 |
| Anthracene | 120-12-7 | 4 | µg/kg | | <4 | <4 | 8 | <4 | <4 |
| Fluoranthene | 206-44-0 | 4 | µg/kg | | <4 | <4 | 80 | <4 | <4 |
| Pyrene | 129-00-0 | 4 | µg/kg | | <4 | <4 | 57 | <4 | <4 |
| Benzo(a)anthracene | 56-55-3 | 4 | µg/kg | | <4 | <4 | 26 | <4 | <4 |
| Chrysene | 218-01-9 | 4 | µg/kg | | <4 | <4 | 38 | <4 | <4 |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 4 | µg/kg | | <4 | <4 | 29 | <4 | <4 |
| Benzo(k)fluoranthene | 207-08-9 | 4 | µg/kg | | <4 | <4 | 12 | <4 | <4 |
| Benzo(e)pyrene | 192-97-2 | 4 | µg/kg | | <4 | <4 | 16 | <4 | <4 |
| Benzo(a)pyrene | 50-32-8 | 4 | µg/kg | | <4 | <4 | 22 | <4 | <4 |
| Perylene | 198-55-0 | 4 | µg/kg | | <4 | <4 | 6 | <4 | <4 |
| Benzo(g,h,i)perylene | 191-24-2 | 4 | µg/kg | | <4 | <4 | 15 | <4 | <4 |
| Dibenz(a,h)anthracene | 53-70-3 | 4 | µg/kg | | <4 | <4 | <4 | <4 | <4 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 4 | µg/kg | | <4 | <4 | 14 | <4 | <4 |
| Coronene | 191-07-1 | 5 | µg/kg | | <5 | <5 | <5 | <5 | <5 |
| ^ Sum of PAHs | ---- | 4 | µg/kg | | <4 | 13 | 419 | <4 | <4 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 4 | µg/kg | | <4 | <4 | 31 | <4 | <4 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 4 | µg/kg | | 5 | 5 | 33 | 5 | 5 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 4 | µg/kg | | 10 | 10 | 35 | 10 | 10 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2 bS2 | CPB2 CD1 | CPB2 CD2 | NRA | NRB |
|--|------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-006 | EM1903075-007 | EM1903075-008 | EM1903075-009 | EM1903075-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP231A: Perfluoroalkyl Sulfonic Acids - Continued | | | | | | | | | |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2 bS2 | CPB2 CD1 | CPB2 CD2 | NRA | NRB |
|---|--------------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-006 | EM1903075-007 | EM1903075-008 | EM1903075-009 | EM1903075-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP231C: Perfluoroalkyl Sulfonamides - Continued | | | | | | | | | |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Sum of PFAS (WA DER List) | ---- | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| EP080-SD: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.2 | % | | 92.9 | 93.4 | 74.6 | 83.8 | 88.3 |
| Toluene-D8 | 2037-26-5 | 0.2 | % | | 100 | 103 | 81.6 | 89.8 | 103 |
| 4-Bromofluorobenzene | 460-00-4 | 0.2 | % | | 109 | 116 | 97.1 | 97.8 | 108 |
| EP090S: Organotin Surrogate | | | | | | | | | |
| Tripolytin | ---- | 0.5 | % | | 74.6 | 98.0 | 75.8 | 108 | 129 |
| EP131S: OC Pesticide Surrogate | | | | | | | | | |
| Dibromo-DDE | 21655-73-2 | 0.50 | % | | 48.5 | 46.4 | 49.3 | 35.1 | 41.2 |
| EP131T: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.5 | % | | 57.9 | 74.5 | 57.2 | 57.8 | 64.8 |
| EP132T: Base/Neutral Extractable Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 10 | % | | 104 | 91.2 | 96.4 | 117 | 83.4 |
| Anthracene-d10 | 1719-06-8 | 10 | % | | 92.0 | 90.4 | 89.6 | 107 | 81.8 |
| 4-Terphenyl-d14 | 1718-51-0 | 10 | % | | 84.0 | 85.3 | 83.9 | 103 | 80.7 |



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|---|------------|--------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2 bS2 | CPB2 CD1 | CPB2 CD2 | NRA | NRB |
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | EM1903075-006 | EM1903075-007 | EM1903075-008 | EM1903075-009 | EM1903075-010 |
| | | | | | Result | Result | Result | Result | Result |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | | 80.0 | 77.5 | 104 | 90.5 | 61.0 |
| 13C8-PFOA | ---- | 0.0002 | % | | 83.0 | 90.5 | 103 | 96.0 | 92.0 |



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|---|------------|------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | SRA | SRB | ---- | ---- | ---- |
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1903075-011 | EM1903075-012 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 0.1 | % | | 52.8 | 35.8 | ---- | ---- | ---- |
| EA150: Particle Sizing | | | | | | | | | |
| +75µm | ---- | 1 | % | | 80 | 97 | ---- | ---- | ---- |
| +150µm | ---- | 1 | % | | 39 | 91 | ---- | ---- | ---- |
| +300µm | ---- | 1 | % | | 25 | 68 | ---- | ---- | ---- |
| +425µm | ---- | 1 | % | | 17 | 47 | ---- | ---- | ---- |
| +600µm | ---- | 1 | % | | 12 | 32 | ---- | ---- | ---- |
| +1180µm | ---- | 1 | % | | 8 | 17 | ---- | ---- | ---- |
| +2.36mm | ---- | 1 | % | | 6 | 8 | ---- | ---- | ---- |
| +4.75mm | ---- | 1 | % | | 4 | 4 | ---- | ---- | ---- |
| +9.5mm | ---- | 1 | % | | 2 | 2 | ---- | ---- | ---- |
| +19.0mm | ---- | 1 | % | | <1 | <1 | ---- | ---- | ---- |
| +37.5mm | ---- | 1 | % | | <1 | <1 | ---- | ---- | ---- |
| +75.0mm | ---- | 1 | % | | <1 | <1 | ---- | ---- | ---- |
| EA150: Soil Classification based on Particle Size | | | | | | | | | |
| Clay (<2 µm) | ---- | 1 | % | | 11 | 3 | ---- | ---- | ---- |
| Silt (2-60 µm) | ---- | 1 | % | | 7 | <1 | ---- | ---- | ---- |
| Sand (0.06-2.00 mm) | ---- | 1 | % | | 75 | 86 | ---- | ---- | ---- |
| Gravel (>2mm) | ---- | 1 | % | | 7 | 11 | ---- | ---- | ---- |
| Cobbles (>6cm) | ---- | 1 | % | | <1 | <1 | ---- | ---- | ---- |
| EA152: Soil Particle Density | | | | | | | | | |
| Soil Particle Density (Clay/Silt/Sand) | ---- | 0.01 | g/cm3 | | 2.56 | 2.60 | ---- | ---- | ---- |
| EG005(ED093)-SD: Total Metals in Sediments by ICP-AES | | | | | | | | | |
| Iron | 7439-89-6 | 50 | mg/kg | | 13800 | 11600 | ---- | ---- | ---- |
| EG020-SD: Total Metals in Sediments by ICPMS | | | | | | | | | |
| Antimony | 7440-36-0 | 0.50 | mg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 1.00 | mg/kg | | 16.4 | 17.6 | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | ---- | ---- |
| Chromium | 7440-47-3 | 1.0 | mg/kg | | 16.4 | 6.7 | ---- | ---- | ---- |
| Copper | 7440-50-8 | 1.0 | mg/kg | | 3.3 | <1.0 | ---- | ---- | ---- |
| Cobalt | 7440-48-4 | 0.5 | mg/kg | | 3.2 | 1.6 | ---- | ---- | ---- |
| Lead | 7439-92-1 | 1.0 | mg/kg | | 4.4 | 1.9 | ---- | ---- | ---- |
| Manganese | 7439-96-5 | 10 | mg/kg | | 70 | 88 | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 1.0 | mg/kg | | 7.6 | 1.4 | ---- | ---- | ---- |



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|---|-------------------|------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | SRA | SRB | ---- | ---- | ---- |
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1903075-011 | EM1903075-012 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EG020-SD: Total Metals in Sediments by ICPMS - Continued | | | | | | | | | |
| Selenium | 7782-49-2 | 0.1 | mg/kg | | 0.4 | 0.1 | ---- | ---- | ---- |
| Silver | 7440-22-4 | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | ---- | ---- |
| Vanadium | 7440-62-2 | 2.0 | mg/kg | | 44.4 | 37.7 | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 1.0 | mg/kg | | 17.7 | 4.7 | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) | | | | | | | | | |
| Mercury | 7439-97-6 | 0.01 | mg/kg | | 0.02 | <0.01 | ---- | ---- | ---- |
| EP003: Total Organic Carbon (TOC) in Soil | | | | | | | | | |
| Total Organic Carbon | ---- | 0.02 | % | | 0.68 | 0.06 | ---- | ---- | ---- |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | | |
| >C10 - C16 Fraction | ---- | 3 | mg/kg | | 14 | <3 | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 3 | mg/kg | | 19 | 8 | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 5 | mg/kg | | 10 | <5 | ---- | ---- | ---- |
| >C10 - C40 Fraction (sum) | ---- | 3 | mg/kg | | 43 | 8 | ---- | ---- | ---- |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 3 | mg/kg | | 14 | <3 | ---- | ---- | ---- |
| EP080-SD / EP071-SD: Total Petroleum Hydrocarbons | | | | | | | | | |
| C6 - C9 Fraction | ---- | 3 | mg/kg | | <3 | <3 | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 3 | mg/kg | | 12 | <3 | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 3 | mg/kg | | 16 | 6 | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 5 | mg/kg | | 12 | <5 | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 3 | mg/kg | | 40 | 6 | ---- | ---- | ---- |
| EP080-SD / EP071-SD: Total Recoverable Hydrocarbons | | | | | | | | | |
| C6 - C10 Fraction | C6_C10 | 3 | mg/kg | | <3 | <3 | ---- | ---- | ---- |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 3.0 | mg/kg | | <3.0 | <3.0 | ---- | ---- | ---- |
| EP080-SD: BTEXN | | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| Toluene | 108-88-3 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| ^ Total Xylenes | ---- | 0.5 | mg/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Sum of BTEX | ---- | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| Naphthalene | 91-20-3 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | SRA | SRB | ---- | ---- | ---- |
|--|----------------------|------|---------|------------------|-------------------|-------------------|-------|-------|-------|
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1903075-011 | EM1903075-012 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP090: Organotin Compounds | | | | | | | | | |
| Monobutyltin | 78763-54-9 | 1 | µgSn/kg | | <1 | <1 | ---- | ---- | ---- |
| Dibutyltin | 1002-53-5 | 1 | µgSn/kg | | <1 | <1 | ---- | ---- | ---- |
| Tributyltin | 56573-85-4 | 0.5 | µgSn/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| EP131A: Organochlorine Pesticides | | | | | | | | | |
| Aldrin | 309-00-2 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| alpha-BHC | 319-84-6 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| 4,4`-DDD | 72-54-8 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| 4,4`-DDE | 72-55-9 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| 4,4`-DDT | 50-29-3 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| alpha-Endosulfan | 959-98-8 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| beta-Endosulfan | 33213-65-9 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| ^ Endosulfan (sum) | 115-29-7 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| Endrin ketone | 53494-70-5 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.25 | µg/kg | | <0.25 | <0.25 | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| ^ Total Chlordane (sum) | ----- | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| Oxychlordane | 27304-13-8 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.50 | µg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| EP131B: Polychlorinated Biphenyls (as Aroclors) | | | | | | | | | |
| ^ Total Polychlorinated biphenyls | ----- | 5.0 | µg/kg | | <6.2 | <5.0 | ---- | ---- | ---- |
| Aroclor 1016 | 12674-11-2 | 5.0 | µg/kg | | <6.2 | <5.0 | ---- | ---- | ---- |
| Aroclor 1221 | 11104-28-2 | 5.0 | µg/kg | | <6.2 | <5.0 | ---- | ---- | ---- |



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|---|-------------------|--------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | SRA | SRB | ---- | ---- | ---- |
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1903075-011 | EM1903075-012 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP131B: Polychlorinated Biphenyls (as Aroclors) - Continued | | | | | | | | | |
| Aroclor 1232 | 11141-16-5 | 5.0 | µg/kg | | <6.2 | <5.0 | ---- | ---- | ---- |
| Aroclor 1242 | 53469-21-9 | 5.0 | µg/kg | | <6.2 | <5.0 | ---- | ---- | ---- |
| Aroclor 1248 | 12672-29-6 | 5.0 | µg/kg | | <6.2 | <5.0 | ---- | ---- | ---- |
| Aroclor 1254 | 11097-69-1 | 5.0 | µg/kg | | <6.2 | <5.0 | ---- | ---- | ---- |
| Aroclor 1260 | 11096-82-5 | 5.0 | µg/kg | | <6.2 | <5.0 | ---- | ---- | ---- |
| EP132B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 5 | µg/kg | | 30 | <5 | ---- | ---- | ---- |
| 2-Methylnaphthalene | 91-57-6 | 5 | µg/kg | | <5 | <5 | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 4 | µg/kg | | 5 | <4 | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 4 | µg/kg | | 5 | <4 | ---- | ---- | ---- |
| Benzo(a)anthracene | 56-55-3 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Benzo(e)pyrene | 192-97-2 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Perylene | 198-55-0 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 4 | µg/kg | | 5 | <4 | ---- | ---- | ---- |
| Coronene | 191-07-1 | 5 | µg/kg | | <5 | <5 | ---- | ---- | ---- |
| ^ Sum of PAHs | ---- | 4 | µg/kg | | 45 | <4 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 4 | µg/kg | | 5 | 5 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 4 | µg/kg | | 10 | 10 | ---- | ---- | ---- |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |



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|--|------------|--------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | SRA | SRB | ---- | ---- | ---- |
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1903075-011 | EM1903075-012 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP231A: Perfluoroalkyl Sulfonic Acids - Continued | | | | | | | | | |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | | <0.001 | <0.001 | ---- | ---- | ---- |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | ---- | ---- | ---- |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | ---- | ---- | ---- |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | SRA | SRB | ---- | ---- | ---- |
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | EM1903075-011 | EM1903075-012 | ----- | ----- | ----- | ----- |
| | | | | Result | Result | ---- | ---- | ---- | ---- |
| EP231C: Perfluoroalkyl Sulfonamides - Continued | | | | | | | | | |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | ---- | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | ---- | ---- | ---- | ---- |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | ---- | ---- | ---- | ---- |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | ---- | ---- | ---- | ---- |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | ---- | ---- | ---- | ---- |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | <0.0005 | ---- | ---- | ---- | ---- |
| EP231P: PFAS Sums | | | | | | | | | |
| Sum of PFAS | ---- | 0.0002 | mg/kg | <0.0002 | <0.0002 | ---- | ---- | ---- | ---- |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | ---- | ---- | ---- | ---- |
| Sum of PFAS (WA DER List) | ---- | 0.0002 | mg/kg | <0.0002 | <0.0002 | ---- | ---- | ---- | ---- |
| EP080-SD: TPH(V)/BTEX Surrogates | | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.2 | % | 78.7 | 86.4 | ---- | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 0.2 | % | 85.5 | 90.9 | ---- | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 0.2 | % | 98.7 | 102 | ---- | ---- | ---- | ---- |
| EP090S: Organotin Surrogate | | | | | | | | | |
| Tripolytin | ---- | 0.5 | % | 110 | 113 | ---- | ---- | ---- | ---- |
| EP131S: OC Pesticide Surrogate | | | | | | | | | |
| Dibromo-DDE | 21655-73-2 | 0.50 | % | 54.9 | 40.4 | ---- | ---- | ---- | ---- |
| EP131T: PCB Surrogate | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.5 | % | 64.8 | 54.5 | ---- | ---- | ---- | ---- |
| EP132T: Base/Neutral Extractable Surrogates | | | | | | | | | |
| 2-Fluorobiphenyl | 321-60-8 | 10 | % | 104 | 118 | ---- | ---- | ---- | ---- |
| Anthracene-d10 | 1719-06-8 | 10 | % | 102 | 122 | ---- | ---- | ---- | ---- |
| 4-Terphenyl-d14 | 1718-51-0 | 10 | % | 110 | 121 | ---- | ---- | ---- | ---- |



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| Sub-Matrix: MARINE SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | SRA | SRB | ---- | ---- | ---- |
| Client sampling date / time | | | | | 01-Mar-2019 00:00 | 01-Mar-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | EM1903075-011 | EM1903075-012 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP231S: PFAS Surrogate | | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | | 76.0 | 75.5 | ---- | ---- | ---- |
| 13C8-PFOA | ---- | 0.0002 | % | | 91.5 | 93.0 | ---- | ---- | ---- |



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| Sub-Matrix: MARINE SEDIMENT | | □□□□ □□□ □ s □ | |
| Compound | CAS Number | □□% | □□ □ |
| EP080-SD: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 67 | 137 |
| Toluene-D8 | 2037-26-5 | 74 | 134 |
| 4-Bromofluorobenzene | 460-00-4 | 73 | 137 |
| EP090S: Organotin Surrogate | | | |
| Tripopyltin | ---- | 35 | 130 |
| EP131S: OC Pesticide Surrogate | | | |
| Dibromo-DDE | 21655-73-2 | 10 | 119 |
| EP131T: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 10 | 106 |
| EP132T: Base/Neutral Extractable Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 55 | 135 |
| Anthracene-d10 | 1719-06-8 | 70 | 136 |
| 4-Terphenyl-d14 | 1718-51-0 | 57 | 127 |
| EP231S: PFAS Surrogate | | | |
| 13C4-PFOS | ---- | 60 | 120 |
| 13C8-PFOA | ---- | 60 | 120 |

QUALITY CONTROL REPORT

| | | | |
|--------------------------------|---|--------------------------------|---|
| Work Order | : EM1903075 | Page | : 1 of 16 |
| Client | : CEE CONSULTANTS | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Contact | : Customer Services EM |
| Address | : Unit 4, 150 Chesterville Rd,
Cheltenham VIC 3192 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| Telephone | : +61 03 9553 4787 | Telephone | : +61-3-8549 9600 |
| Project | : CRIB POINT | Date Samples Received | : 01-Mar-2019 |
| Order number | : [REDACTED] | Date Analysis Commenced | : 07-Mar-2019 |
| C-O-C number | : ---- | Issue Date | : 19-Mar-2019 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : ME/155/19 V3 | | |
| No. of samples received | : 12 | | |
| No. of samples analysed | : 12 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED SIGNATURE]

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Laboratory Coordinator (2IC)
Organic Coordinator

Analyst
Organic Chemist
Senior Acid Sulfate Soil Chemist

□ □ □ □ □ □ □ □ □ □ □ □

Newcastle - Inorganics, Mayfield West, NSW
Sydney Organics, Smithfield, NSW
Sydney Organics, Smithfield, NSW
Sydney Inorganics, Smithfield, NSW
Brisbane Organics, Stafford, QLD
Brisbane Acid Sulphate Soils, Stafford, QLD



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|-------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 2228842) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EG005-SD: Iron | 7439-89-6 | 50 | mg/kg | 8360 | 7600 | 9.51 | 0% - 20% |
| EM1903075-011 | SRA | EG005-SD: Iron | 7439-89-6 | 50 | mg/kg | 13800 | 12400 | 11.3 | 0% - 20% |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 2228843) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EG035T-LL: Mercury | 7439-97-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EM1903075-011 | SRA | EG035T-LL: Mercury | 7439-97-6 | 0.01 | mg/kg | 0.02 | 0.01 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2222532) | | | | | | | | | |
| EM1903075-003 | CPB1 c | EA055: Moisture Content | ---- | 0.1 | % | 31.0 | 33.4 | 7.60 | 0% - 20% |
| EP1902013-020 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 24.8 | 25.2 | 1.57 | 0% - 20% |
| EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 2228841) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EG020-SD: Zinc | 7440-66-6 | 1 | mg/kg | 8.7 | 6.4 | 30.2 | No Limit |
| EM1903075-001 | CPB1 a | EG020-SD: Cadmium | 7440-43-9 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| | | EG020-SD: Selenium | 7782-49-2 | 0.1 | mg/kg | 0.1 | 0.1 | 0.00 | No Limit |
| | | EG020-SD: Silver | 7440-22-4 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| | | EG020-SD: Antimony | 7440-36-0 | 0.5 | mg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EG020-SD: Cobalt | 7440-48-4 | 0.5 | mg/kg | 1.4 | 1.3 | 10.4 | No Limit |
| | | EG020-SD: Arsenic | 7440-38-2 | 1 | mg/kg | 13.6 | 12.9 | 5.17 | 0% - 50% |
| | | EG020-SD: Chromium | 7440-47-3 | 1 | mg/kg | 4.9 | 4.5 | 7.86 | No Limit |
| | | EG020-SD: Copper | 7440-50-8 | 1 | mg/kg | 1.3 | 2.0 | 45.6 | No Limit |
| | | EG020-SD: Lead | 7439-92-1 | 1 | mg/kg | 1.6 | 3.1 | 67.0 | No Limit |
| | | EG020-SD: Nickel | 7440-02-0 | 1 | mg/kg | 1.7 | 1.6 | 9.18 | No Limit |
| | | EG020-SD: Manganese | 7439-96-5 | 10 | mg/kg | 38 | 33 | 15.4 | No Limit |
| | | EG020-SD: Vanadium | 7440-62-2 | 2 | mg/kg | 27.3 | 27.7 | 1.58 | 0% - 50% |
| | | EG020-SD: Cadmium | 7440-43-9 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| | | EG020-SD: Selenium | 7782-49-2 | 0.1 | mg/kg | 0.4 | 0.4 | 0.00 | No Limit |
| EM1903075-011 | SRA | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|-------------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 2228841) - continued | | | | | | | | | |
| EM1903075-011 | SRA | EG020-SD: Silver | 7440-22-4 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| | | EG020-SD: Antimony | 7440-36-0 | 0.5 | mg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EG020-SD: Cobalt | 7440-48-4 | 0.5 | mg/kg | 3.2 | 2.7 | 17.2 | No Limit |
| | | EG020-SD: Arsenic | 7440-38-2 | 1 | mg/kg | 16.4 | 14.6 | 11.6 | 0% - 50% |
| | | EG020-SD: Chromium | 7440-47-3 | 1 | mg/kg | 16.4 | 13.9 | 16.0 | 0% - 50% |
| | | EG020-SD: Copper | 7440-50-8 | 1 | mg/kg | 3.3 | 2.9 | 14.2 | No Limit |
| | | EG020-SD: Lead | 7439-92-1 | 1 | mg/kg | 4.4 | 3.9 | 10.7 | No Limit |
| | | EG020-SD: Nickel | 7440-02-0 | 1 | mg/kg | 7.6 | 6.6 | 14.4 | No Limit |
| | | EG020-SD: Zinc | 7440-66-6 | 1 | mg/kg | 17.7 | 13.7 | 25.5 | 0% - 50% |
| | | EG020-SD: Manganese | 7439-96-5 | 10 | mg/kg | 70 | 48 | 36.5 | No Limit |
| | | EG020-SD: Vanadium | 7440-62-2 | 2 | mg/kg | 44.4 | 39.1 | 12.6 | 0% - 20% |
| EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 2237682) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP003: Total Organic Carbon | ---- | 0.02 | % | 0.13 | 0.11 | 12.4 | No Limit |
| EM1903075-011 | SRA | EP003: Total Organic Carbon | ---- | 0.02 | % | 0.68 | 0.57 | 17.4 | 0% - 20% |
| EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 2220338) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP080-SD: C6 - C9 Fraction | ---- | 3 | mg/kg | <3 | <3 | 0.00 | No Limit |
| EM1903075-011 | SRA | EP080-SD: C6 - C9 Fraction | ---- | 3 | mg/kg | <3 | <3 | 0.00 | No Limit |
| EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QC Lot: 2220358) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP071-SD: C10 - C14 Fraction | ---- | 3 | mg/kg | <3 | <3 | 0.00 | No Limit |
| | | EP071-SD: C15 - C28 Fraction | ---- | 3 | mg/kg | 3 | 4 | 30.4 | No Limit |
| | | EP071-SD: C10 - C36 Fraction (sum) | ---- | 3 | mg/kg | 3 | 4 | 28.6 | No Limit |
| | | EP071-SD: C29 - C36 Fraction | ---- | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1903075-011 | SRA | EP071-SD: C10 - C14 Fraction | ---- | 3 | mg/kg | 12 | 13 | 9.71 | No Limit |
| | | EP071-SD: C15 - C28 Fraction | ---- | 3 | mg/kg | 16 | 20 | 23.4 | No Limit |
| | | EP071-SD: C10 - C36 Fraction (sum) | ---- | 3 | mg/kg | 40 | 45 | 11.8 | 0% - 50% |
| | | EP071-SD: C29 - C36 Fraction | ---- | 5 | mg/kg | 12 | 12 | 0.00 | No Limit |
| EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QC Lot: 2220358) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP071-SD: >C10 - C16 Fraction | ---- | 3 | mg/kg | <3 | <3 | 0.00 | No Limit |
| | | EP071-SD: >C16 - C34 Fraction | ---- | 3 | mg/kg | 4 | 6 | 32.3 | No Limit |
| | | EP071-SD: >C10 - C40 Fraction (sum) | ---- | 3 | mg/kg | 4 | 6 | 40.0 | No Limit |
| | | EP071-SD: >C34 - C40 Fraction | ---- | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM1903075-011 | SRA | EP071-SD: >C10 - C16 Fraction | ---- | 3 | mg/kg | 14 | 16 | 14.1 | No Limit |
| | | EP071-SD: >C16 - C34 Fraction | ---- | 3 | mg/kg | 19 | 22 | 17.2 | No Limit |
| | | EP071-SD: >C10 - C40 Fraction (sum) | ---- | 3 | mg/kg | 43 | 49 | 13.0 | 0% - 50% |
| | | EP071-SD: >C34 - C40 Fraction | ---- | 5 | mg/kg | 10 | 11 | 11.0 | No Limit |
| EP080-SD: BTEXN (QC Lot: 2220338) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP080-SD: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080-SD: Toluene | 108-88-3 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080-SD: Ethylbenzene | 100-41-4 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--------------------------------|----------------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080-SD: BTEXN (QC Lot: 2220338) - continued | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP080-SD: meta- & para-Xylene | 108-38-3
106-42-3 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080-SD: ortho-Xylene | 95-47-6 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EM1903075-011 | SRA | EP080-SD: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080-SD: Toluene | 108-88-3 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080-SD: Ethylbenzene | 100-41-4 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080-SD: meta- & para-Xylene | 108-38-3
106-42-3 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP080-SD: ortho-Xylene | 95-47-6 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| EP090: Organotin Compounds (QC Lot: 2220053) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP090: Tributyltin | 56573-85-4 | 0.5 | µgSn/kg | 1.4 | 1.2 | 14.4 | No Limit |
| | | EP090: Monobutyltin | 78763-54-9 | 1 | µgSn/kg | <1 | <1 | 0.00 | No Limit |
| | | EP090: Dibutyltin | 1002-53-5 | 1 | µgSn/kg | <1 | <1 | 0.00 | No Limit |
| EM1903075-011 | SRA | EP090: Tributyltin | 56573-85-4 | 0.5 | µgSn/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP090: Monobutyltin | 78763-54-9 | 1 | µgSn/kg | <1 | <1 | 0.00 | No Limit |
| | | EP090: Dibutyltin | 1002-53-5 | 1 | µgSn/kg | <1 | <1 | 0.00 | No Limit |
| EP131A: Organochlorine Pesticides (QC Lot: 2220355) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP131A: gamma-BHC | 58-89-9 | 0.25 | µg/kg | <0.25 | <0.25 | 0.00 | No Limit |
| | | EP131A: cis-Chlordane | 5103-71-9 | 0.25 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: trans-Chlordane | 5103-74-2 | 0.25 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Total Chlordane (sum) | ---- | 0.25 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Aldrin | 309-00-2 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: alpha-BHC | 319-84-6 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: beta-BHC | 319-85-7 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: delta-BHC | 319-86-8 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: 4,4'-DDD | 72-54-8 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: 4,4'-DDE | 72-55-9 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: 4,4'-DDT | 50-29-3 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Dieldrin | 60-57-1 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: alpha-Endosulfan | 959-98-8 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: beta-Endosulfan | 33213-65-9 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Endosulfan sulfate | 1031-07-8 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Endosulfan (sum) | 115-29-7 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Endrin | 72-20-8 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Endrin aldehyde | 7421-93-4 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Endrin ketone | 53494-70-5 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Heptachlor | 76-44-8 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Heptachlor epoxide | 1024-57-3 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP131A: Organochlorine Pesticides (QC Lot: 2220355) - continued | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP131A: Hexachlorobenzene (HCB) | 118-74-1 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Methoxychlor | 72-43-5 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| EM1903075-011 | SRA | EP131A: gamma-BHC | 58-89-9 | 0.25 | µg/kg | <0.25 | <0.25 | 0.00 | No Limit |
| | | EP131A: cis-Chlordane | 5103-71-9 | 0.25 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: trans-Chlordane | 5103-74-2 | 0.25 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Total Chlordane (sum) | ---- | 0.25 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Aldrin | 309-00-2 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: alpha-BHC | 319-84-6 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: beta-BHC | 319-85-7 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: delta-BHC | 319-86-8 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: 4,4'-DDD | 72-54-8 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: 4,4'-DDE | 72-55-9 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: 4,4'-DDT | 50-29-3 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Dieldrin | 60-57-1 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: alpha-Endosulfan | 959-98-8 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: beta-Endosulfan | 33213-65-9 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Endosulfan sulfate | 1031-07-8 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Endosulfan (sum) | 115-29-7 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Endrin | 72-20-8 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Endrin aldehyde | 7421-93-4 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Endrin ketone | 53494-70-5 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Heptachlor | 76-44-8 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Heptachlor epoxide | 1024-57-3 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Hexachlorobenzene (HCB) | 118-74-1 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EP131A: Methoxychlor | 72-43-5 | 0.5 | µg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| EP131B: Polychlorinated Biphenyls (as Aroclors) (QC Lot: 2220354) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP131B: Total Polychlorinated biphenyls | ---- | 5 | µg/kg | <5.0 | <5.0 | 0.00 | No Limit |
| | | EP131B: Aroclor 1016 | 12674-11-2 | 5 | µg/kg | <5.0 | <5.0 | 0.00 | No Limit |
| | | EP131B: Aroclor 1221 | 11104-28-2 | 5 | µg/kg | <5.0 | <5.0 | 0.00 | No Limit |
| | | EP131B: Aroclor 1232 | 11141-16-5 | 5 | µg/kg | <5.0 | <5.0 | 0.00 | No Limit |
| | | EP131B: Aroclor 1242 | 53469-21-9 | 5 | µg/kg | <5.0 | <5.0 | 0.00 | No Limit |
| | | EP131B: Aroclor 1248 | 12672-29-6 | 5 | µg/kg | <5.0 | <5.0 | 0.00 | No Limit |
| | | EP131B: Aroclor 1254 | 11097-69-1 | 5 | µg/kg | <5.0 | <5.0 | 0.00 | No Limit |
| | | EP131B: Aroclor 1260 | 11096-82-5 | 5 | µg/kg | <5.0 | <5.0 | 0.00 | No Limit |
| EM1903075-011 | SRA | EP131B: Total Polychlorinated biphenyls | ---- | 5 | µg/kg | <6.2 | <6.2 | 0.00 | No Limit |
| | | EP131B: Aroclor 1016 | 12674-11-2 | 5 | µg/kg | <6.2 | <6.2 | 0.00 | No Limit |
| | | EP131B: Aroclor 1221 | 11104-28-2 | 5 | µg/kg | <6.2 | <6.2 | 0.00 | No Limit |
| | | EP131B: Aroclor 1232 | 11141-16-5 | 5 | µg/kg | <6.2 | <6.2 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|-----------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP131B: Polychlorinated Biphenyls (as Aroclors) (QC Lot: 2220354) - continued | | | | | | | | | |
| EM1903075-011 | SRA | EP131B: Aroclor 1242 | 53469-21-9 | 5 | µg/kg | <6.2 | <6.2 | 0.00 | No Limit |
| | | EP131B: Aroclor 1248 | 12672-29-6 | 5 | µg/kg | <6.2 | <6.2 | 0.00 | No Limit |
| | | EP131B: Aroclor 1254 | 11097-69-1 | 5 | µg/kg | <6.2 | <6.2 | 0.00 | No Limit |
| | | EP131B: Aroclor 1260 | 11096-82-5 | 5 | µg/kg | <6.2 | <6.2 | 0.00 | No Limit |
| EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2220359) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP132B-SD: Acenaphthylene | 208-96-8 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Acenaphthene | 83-32-9 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Fluorene | 86-73-7 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Phenanthrene | 85-01-8 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Anthracene | 120-12-7 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Fluoranthene | 206-44-0 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Pyrene | 129-00-0 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Benz(a)anthracene | 56-55-3 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Chrysene | 218-01-9 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Benzo(b+j)fluoranthene | 205-99-2 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | | 205-82-3 | | | | | | |
| | | EP132B-SD: Benzo(k)fluoranthene | 207-08-9 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Benzo(e)pyrene | 192-97-2 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Benzo(a)pyrene | 50-32-8 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Perylene | 198-55-0 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Benzo(g,h,i)perylene | 191-24-2 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Dibenz(a,h)anthracene | 53-70-3 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Indeno(1.2.3.cd)pyrene | 193-39-5 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Sum of PAHs | ---- | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Naphthalene | 91-20-3 | 5 | µg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP132B-SD: 2-Methylnaphthalene | 91-57-6 | 5 | µg/kg | <5 | <5 | 0.00 | No Limit |
| EP132B-SD: Coronene | 191-07-1 | 5 | µg/kg | <5 | <5 | 0.00 | No Limit | | |
| EM1903075-011 | SRA | EP132B-SD: Acenaphthylene | 208-96-8 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Acenaphthene | 83-32-9 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Fluorene | 86-73-7 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Phenanthrene | 85-01-8 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Anthracene | 120-12-7 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Fluoranthene | 206-44-0 | 4 | µg/kg | 5 | 7 | 20.8 | No Limit |
| | | EP132B-SD: Pyrene | 129-00-0 | 4 | µg/kg | 5 | 6 | 0.00 | No Limit |
| | | EP132B-SD: Benz(a)anthracene | 56-55-3 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Chrysene | 218-01-9 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Benzo(b+j)fluoranthene | 205-99-2 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | | 205-82-3 | | | | | | |
| | | EP132B-SD: Benzo(k)fluoranthene | 207-08-9 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Benzo(e)pyrene | 192-97-2 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|------------|---|-----------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2220359) - continued | | | | | | | | | |
| EM1903075-011 | SRA | EP132B-SD: Benzo(a)pyrene | 50-32-8 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Perylene | 198-55-0 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Benzo(g,h,i)perylene | 191-24-2 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Dibenz(a,h)anthracene | 53-70-3 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Indeno(1.2.3.cd)pyrene | 193-39-5 | 4 | µg/kg | 5 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Sum of PAHs | ---- | 4 | µg/kg | 45 | 36 | 22.2 | 0% - 50% |
| | | EP132B-SD: Naphthalene | 91-20-3 | 5 | µg/kg | 30 | 23 | 25.2 | No Limit |
| | | EP132B-SD: 2-Methylnaphthalene | 91-57-6 | 5 | µg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP132B-SD: Coronene | 191-07-1 | 5 | µg/kg | <5 | <5 | 0.00 | No Limit |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2231485) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| EM1903075-011 | SRA | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2231485) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | 0.00 | No Limit |
| | | EM1903075-011 | SRA | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 |
| EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | | | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | | | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | | | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | | | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | | | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|-------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2231485) - continued | | | | | | | | | |
| EM1903075-011 | SRA | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | 0.00 | No Limit |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2231485) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| EM1903075-011 | SRA | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2231485) | | | | | | | | | |
| EM1903075-001 | CPB1 a | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |

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 Work Order : EM1903075
 Client : CEE CONSULTANTS
 Project : CRIB POINT



Sub-Matrix: **SOIL**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|-------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2231485) - continued | | | | | | | | | |
| EM1903075-011 | SRA | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 2228842) | | | | | | | | |
| EG005-SD: Iron | 7439-89-6 | 50 | mg/kg | <50 | 8400 mg/kg | 76.2 | 70 | 109 |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 2228843) | | | | | | | | |
| EG035T-LL: Mercury | 7439-97-6 | 0.01 | mg/kg | <0.01 | 0.257 mg/kg | 104 | 72 | 116 |
| EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 2228841) | | | | | | | | |
| EG020-SD: Antimony | 7440-36-0 | 0.5 | mg/kg | <0.50 | ---- | ---- | ---- | ---- |
| EG020-SD: Arsenic | 7440-38-2 | 1 | mg/kg | <1.00 | 21.7 mg/kg | 97.4 | 80 | 139 |
| EG020-SD: Cadmium | 7440-43-9 | 0.1 | mg/kg | <0.1 | 4.64 mg/kg | 103 | 83 | 127 |
| EG020-SD: Chromium | 7440-47-3 | 1 | mg/kg | <1.0 | 43.9 mg/kg | 86.3 | 73 | 130 |
| EG020-SD: Copper | 7440-50-8 | 1 | mg/kg | <1.0 | 32 mg/kg | 102 | 76 | 130 |
| EG020-SD: Cobalt | 7440-48-4 | 0.5 | mg/kg | <0.5 | 16 mg/kg | 103 | 81 | 130 |
| EG020-SD: Lead | 7439-92-1 | 1 | mg/kg | <1.0 | 40 mg/kg | 110 | 74 | 130 |
| EG020-SD: Manganese | 7439-96-5 | 10 | mg/kg | <10 | 130 mg/kg | 101 | 76 | 130 |
| EG020-SD: Nickel | 7440-02-0 | 1 | mg/kg | <1.0 | 55 mg/kg | 100 | 83 | 130 |
| EG020-SD: Selenium | 7782-49-2 | 0.1 | mg/kg | <0.1 | 5.37 mg/kg | 109 | 71 | 130 |
| EG020-SD: Silver | 7440-22-4 | 0.1 | mg/kg | <0.1 | ---- | ---- | ---- | ---- |
| EG020-SD: Vanadium | 7440-62-2 | 2 | mg/kg | <2.0 | 29.6 mg/kg | 106 | 84 | 131 |
| EG020-SD: Zinc | 7440-66-6 | 1 | mg/kg | <1.0 | 60.8 mg/kg | 112 | 82 | 137 |
| EP003: Total Organic Carbon (TOC) in Soil (QCLot: 2237682) | | | | | | | | |
| EP003: Total Organic Carbon | ---- | 0.02 | % | <0.02 | 0.44 % | 101 | 70 | 130 |
| EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 2220338) | | | | | | | | |
| EP080-SD: C6 - C9 Fraction | ---- | 3 | mg/kg | <3 | 6.2 mg/kg | 73.3 | 61 | 133 |
| EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 2220358) | | | | | | | | |
| EP071-SD: C10 - C14 Fraction | ---- | 3 | mg/kg | <3 | 5 mg/kg | 87.2 | 78 | 118 |
| EP071-SD: C15 - C28 Fraction | ---- | 3 | mg/kg | <3 | 7.5 mg/kg | 105 | 84 | 118 |
| EP071-SD: C29 - C36 Fraction | ---- | 5 | mg/kg | <5 | 5 mg/kg | 106 | 73 | 119 |
| EP071-SD: C10 - C36 Fraction (sum) | ---- | 3 | mg/kg | <3 | ---- | ---- | ---- | ---- |
| EP080-SD / EP071-SD: Total Recoverable Hydrocarbons (QCLot: 2220358) | | | | | | | | |
| EP071-SD: >C10 - C16 Fraction | ---- | 3 | mg/kg | <3 | 6.25 mg/kg | 94.2 | 70 | 130 |
| EP071-SD: >C16 - C34 Fraction | ---- | 3 | mg/kg | <3 | 8.75 mg/kg | 104 | 74 | 138 |
| EP071-SD: >C34 - C40 Fraction | ---- | 5 | mg/kg | <5 | 3.75 mg/kg | 108 | 63 | 131 |
| EP071-SD: >C10 - C40 Fraction (sum) | ---- | 3 | mg/kg | <3 | ---- | ---- | ---- | ---- |
| EP080-SD: BTEXN (QCLot: 2220338) | | | | | | | | |
| EP080-SD: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 0.2 mg/kg | 86.8 | 66 | 122 |



Sub-Matrix: **SOIL**

| Method: Compound | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|--------------|------|---------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | Result | | | | | |
| EP080-SD: BTEXN (QCLot: 2220338) - continued | | | | | | | | |
| EP080-SD: Toluene | 108-88-3 | 0.2 | mg/kg | <0.2 | 0.2 mg/kg | 91.7 | 70 | 130 |
| EP080-SD: Ethylbenzene | 100-41-4 | 0.2 | mg/kg | <0.2 | 0.2 mg/kg | 92.1 | 66 | 126 |
| EP080-SD: meta- & para-Xylene | 108-38-3 | 0.2 | mg/kg | <0.2 | 0.4 mg/kg | 92.2 | 59 | 129 |
| | 106-42-3 | | | | | | | |
| EP080-SD: ortho-Xylene | 95-47-6 | 0.2 | mg/kg | <0.2 | 0.2 mg/kg | 95.1 | 66 | 126 |
| EP090: Organotin Compounds (QCLot: 2220053) | | | | | | | | |
| EP090: Monobutyltin | 78763-54-9 | 1 | µgSn/kg | <1 | 2.5 µgSn/kg | 91.2 | 36 | 128 |
| EP090: Dibutyltin | 1002-53-5 | 1 | µgSn/kg | <1 | 2.5 µgSn/kg | 73.8 | 42 | 132 |
| EP090: Tributyltin | 56573-85-4 | 0.5 | µgSn/kg | <0.5 | 1.25 µgSn/kg | 97.8 | 52 | 139 |
| EP131A: Organochlorine Pesticides (QCLot: 2220355) | | | | | | | | |
| EP131A: Aldrin | 309-00-2 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 88.5 | 38 | 139 |
| EP131A: alpha-BHC | 319-84-6 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 46.0 | 18 | 136 |
| EP131A: beta-BHC | 319-85-7 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 51.8 | 31 | 131 |
| EP131A: delta-BHC | 319-86-8 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 54.8 | 37 | 140 |
| EP131A: 4,4'-DDD | 72-54-8 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 34.8 | 26 | 141 |
| EP131A: 4,4'-DDE | 72-55-9 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 49.0 | 35 | 129 |
| EP131A: 4,4'-DDT | 50-29-3 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 82.5 | 23 | 138 |
| EP131A: Sum of DDD + DDE + DDT | 72-54-8/72-5 | 0.5 | µg/kg | <0.50 | ---- | ---- | ---- | ---- |
| | 5-9/50-2 | | | | | | | |
| EP131A: Dieldrin | 60-57-1 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 47.8 | 30 | 140 |
| EP131A: alpha-Endosulfan | 959-98-8 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 55.1 | 38 | 140 |
| EP131A: beta-Endosulfan | 33213-65-9 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 52.6 | 32 | 152 |
| EP131A: Endosulfan sulfate | 1031-07-8 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 61.2 | 36 | 155 |
| EP131A: Endosulfan (sum) | 115-29-7 | 0.5 | µg/kg | <0.50 | ---- | ---- | ---- | ---- |
| EP131A: Endrin | 72-20-8 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 100 | 26 | 158 |
| EP131A: Endrin aldehyde | 7421-93-4 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 60.3 | 20 | 118 |
| EP131A: Endrin ketone | 53494-70-5 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 37.5 | 13 | 135 |
| EP131A: Heptachlor | 76-44-8 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 41.2 | 39 | 155 |
| EP131A: Heptachlor epoxide | 1024-57-3 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 40.8 | 34 | 148 |
| EP131A: Hexachlorobenzene (HCB) | 118-74-1 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 27.1 | 26 | 152 |
| EP131A: gamma-BHC | 58-89-9 | 0.25 | µg/kg | <0.25 | 5 µg/kg | 47.1 | 31 | 137 |
| EP131A: Methoxychlor | 72-43-5 | 0.5 | µg/kg | <0.50 | 5 µg/kg | 64.5 | 36 | 152 |
| EP131A: cis-Chlordane | 5103-71-9 | 0.25 | µg/kg | <0.25 | 5 µg/kg | 50.5 | 36 | 142 |
| EP131A: trans-Chlordane | 5103-74-2 | 0.25 | µg/kg | <0.25 | 5 µg/kg | 52.6 | 30 | 138 |
| EP131A: Total Chlordane (sum) | ---- | 0.25 | µg/kg | <0.25 | ---- | ---- | ---- | ---- |
| EP131B: Polychlorinated Biphenyls (as Aroclors) (QCLot: 2220354) | | | | | | | | |
| EP131B: Total Polychlorinated biphenyls | ---- | 5 | µg/kg | <5.0 | 50 µg/kg | 51.6 | 45 | 115 |
| EP131B: Aroclor 1016 | 12674-11-2 | 5 | µg/kg | <5.0 | ---- | ---- | ---- | ---- |



Sub-Matrix: **SOIL**

| Method Blank (MB) Report | | | | Laboratory Control Spike (LCS) Report | | | | |
|---|------------|--------|-------|---------------------------------------|--------------------|------|---------------------|------|
| | | | | Spike Concentration | Spike Recovery (%) | | Recovery Limits (%) | |
| | | | | | LCS | Low | High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP131B: Polychlorinated Biphenyls (as Aroclors) (QCLot: 2220354) - continued | | | | | | | | |
| EP131B: Aroclor 1221 | 11104-28-2 | 5 | µg/kg | <5.0 | ---- | ---- | ---- | ---- |
| EP131B: Aroclor 1232 | 11141-16-5 | 5 | µg/kg | <5.0 | ---- | ---- | ---- | ---- |
| EP131B: Aroclor 1242 | 53469-21-9 | 5 | µg/kg | <5.0 | ---- | ---- | ---- | ---- |
| EP131B: Aroclor 1248 | 12672-29-6 | 5 | µg/kg | <5.0 | ---- | ---- | ---- | ---- |
| EP131B: Aroclor 1254 | 11097-69-1 | 5 | µg/kg | <5.0 | 50 µg/kg | 51.6 | 45 | 115 |
| EP131B: Aroclor 1260 | 11096-82-5 | 5 | µg/kg | <5.0 | ---- | ---- | ---- | ---- |
| EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 2220359) | | | | | | | | |
| EP132B-SD: Naphthalene | 91-20-3 | 5 | µg/kg | <5 | 25 µg/kg | 97.3 | 63 | 129 |
| EP132B-SD: 2-Methylnaphthalene | 91-57-6 | 5 | µg/kg | <5 | 25 µg/kg | 94.3 | 64 | 128 |
| EP132B-SD: Acenaphthylene | 208-96-8 | 4 | µg/kg | <4 | 25 µg/kg | 81.2 | 65 | 129 |
| EP132B-SD: Acenaphthene | 83-32-9 | 4 | µg/kg | <4 | 25 µg/kg | 95.9 | 68 | 132 |
| EP132B-SD: Fluorene | 86-73-7 | 4 | µg/kg | <4 | 25 µg/kg | 88.4 | 68 | 124 |
| EP132B-SD: Phenanthrene | 85-01-8 | 4 | µg/kg | <4 | 25 µg/kg | 90.6 | 64 | 134 |
| EP132B-SD: Anthracene | 120-12-7 | 4 | µg/kg | <4 | 25 µg/kg | 87.8 | 65 | 131 |
| EP132B-SD: Fluoranthene | 206-44-0 | 4 | µg/kg | <4 | 25 µg/kg | 90.7 | 64 | 130 |
| EP132B-SD: Pyrene | 129-00-0 | 4 | µg/kg | <4 | 25 µg/kg | 103 | 67 | 133 |
| EP132B-SD: Benz(a)anthracene | 56-55-3 | 4 | µg/kg | <4 | 25 µg/kg | 90.1 | 62 | 130 |
| EP132B-SD: Chrysene | 218-01-9 | 4 | µg/kg | <4 | 25 µg/kg | 84.7 | 65 | 133 |
| EP132B-SD: Benzo(b+j)fluoranthene | 205-99-2 | 4 | µg/kg | <4 | 25 µg/kg | 86.2 | 68 | 120 |
| | 205-82-3 | | | | | | | |
| EP132B-SD: Benzo(k)fluoranthene | 207-08-9 | 4 | µg/kg | <4 | 25 µg/kg | 92.9 | 61 | 133 |
| EP132B-SD: Benzo(e)pyrene | 192-97-2 | 4 | µg/kg | <4 | 25 µg/kg | 90.1 | 63 | 127 |
| EP132B-SD: Benzo(a)pyrene | 50-32-8 | 4 | µg/kg | <4 | 25 µg/kg | 83.7 | 66 | 118 |
| EP132B-SD: Perylene | 198-55-0 | 4 | µg/kg | <4 | 25 µg/kg | 88.3 | 69 | 119 |
| EP132B-SD: Benzo(g,h,i)perylene | 191-24-2 | 4 | µg/kg | <4 | 25 µg/kg | 89.5 | 66 | 120 |
| EP132B-SD: Dibenz(a,h)anthracene | 53-70-3 | 4 | µg/kg | <4 | 25 µg/kg | 87.5 | 64 | 122 |
| EP132B-SD: Indeno(1.2.3.cd)pyrene | 193-39-5 | 4 | µg/kg | <4 | 25 µg/kg | 88.0 | 64 | 120 |
| EP132B-SD: Coronene | 191-07-1 | 5 | µg/kg | <5 | 25 µg/kg | 89.8 | 68 | 136 |
| EP132B-SD: Sum of PAHs | ---- | 4 | µg/kg | <4 | ---- | ---- | ---- | ---- |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2231485) | | | | | | | | |
| EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 67.2 | 57 | 121 |
| EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 68.8 | 55 | 125 |
| EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 74.4 | 52 | 126 |
| EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 69.2 | 54 | 123 |
| EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 61.6 | 55 | 127 |
| EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 65.2 | 54 | 125 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2231485) | | | | | | | | |
| EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | 0.00625 mg/kg | 56.2 | 52 | 128 |

Sub-Matrix: SOIL

| Sub-Matrix: SOIL | | | | Method Blank (MB) Report | Laboratory Control Spike (LCS) Report | | | |
|--|-------------|--------|-------|--------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | Result | | LCS | Low | High |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2231485) - continued | | | | | | | | |
| EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 73.6 | 54 | 129 |
| EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 69.6 | 58 | 127 |
| EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 71.6 | 57 | 128 |
| EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 76.4 | 60 | 134 |
| EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 72.8 | 63 | 130 |
| EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 64.8 | 55 | 130 |
| EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 78.8 | 62 | 130 |
| EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 87.2 | 53 | 134 |
| EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 71.6 | 49 | 129 |
| EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 66.8 | 59 | 129 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2231485) | | | | | | | | |
| EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 67.2 | 52 | 132 |
| EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 73.7 | 65 | 126 |
| EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 77.7 | 64 | 126 |
| EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 70.2 | 63 | 124 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 67.9 | 58 | 125 |
| EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 88.4 | 61 | 130 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 86.4 | 55 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2231485) | | | | | | | | |
| EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 88.8 | 54 | 130 |
| EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 68.4 | 61 | 130 |
| EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 86.4 | 62 | 130 |
| EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 94.4 | 60 | 130 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--------------------|------------|--------------------------|---------------------|---------------------|------|
| | | | | Spike Concentration | SpikeRecovery(%) MS | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | | | Low | High |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 2228843) | | | | | | | |
| EM1903075-001 | CPB1 a | EG035T-LL: Mercury | 7439-97-6 | 0.05 mg/kg | 114 | 70 | 130 |
| EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 2228841) | | | | | | | |



Sub-Matrix: SOIL

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|---|------------------|-------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 2228841) - continued | | | | | | | |
| EM1903075-002 | CPB1 b | EG020-SD: Arsenic | 7440-38-2 | 50 mg/kg | 88.3 | 70 | 130 |
| | | EG020-SD: Cadmium | 7440-43-9 | 50 mg/kg | 93.2 | 70 | 130 |
| | | EG020-SD: Chromium | 7440-47-3 | 50 mg/kg | 90.3 | 70 | 130 |
| | | EG020-SD: Copper | 7440-50-8 | 250 mg/kg | 107 | 70 | 130 |
| | | EG020-SD: Lead | 7439-92-1 | 250 mg/kg | 102 | 70 | 130 |
| | | EG020-SD: Nickel | 7440-02-0 | 50 mg/kg | 91.8 | 70 | 130 |
| | | EG020-SD: Zinc | 7440-66-6 | 250 mg/kg | 89.8 | 70 | 130 |
| EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 2220338) | | | | | | | |
| EM1903075-001 | CPB1 a | EP080-SD: C6 - C9 Fraction | ---- | 6.5 mg/kg | 96.1 | 70 | 130 |
| EP080-SD / EP071-SD: Total Petroleum Hydrocarbons (QCLot: 2220358) | | | | | | | |
| EM1903075-001 | CPB1 a | EP071-SD: C10 - C14 Fraction | ---- | 14 mg/kg | # 66.4 | 70 | 130 |
| | | EP071-SD: C15 - C28 Fraction | ---- | 59 mg/kg | 91.6 | 70 | 130 |
| | | EP071-SD: C29 - C36 Fraction | ---- | 42 mg/kg | 100 | 70 | 130 |
| EP080-SD: BTEXN (QCLot: 2220338) | | | | | | | |
| EM1903075-001 | CPB1 a | EP080-SD: Benzene | 71-43-2 | 0.5 mg/kg | 85.3 | 70 | 130 |
| | | EP080-SD: Toluene | 108-88-3 | 0.5 mg/kg | 92.1 | 70 | 130 |
| | | EP080-SD: Ethylbenzene | 100-41-4 | 0.5 mg/kg | 95.2 | 70 | 130 |
| | | EP080-SD: meta- & para-Xylene | 108-38-3 | 0.5 mg/kg | 94.3 | 70 | 130 |
| | | | 106-42-3 | | | | |
| EP080-SD: ortho-Xylene | 95-47-6 | 0.5 mg/kg | 97.5 | 70 | 130 | | |
| EP090: Organotin Compounds (QCLot: 2220053) | | | | | | | |
| EM1903075-002 | CPB1 b | EP090: Monobutyltin | 78763-54-9 | 1.25 µgSn/kg | # Not Determined | 35 | 130 |
| | | EP090: Dibutyltin | 1002-53-5 | 1.25 µgSn/kg | # Not Determined | 20 | 130 |
| | | EP090: Tributyltin | 56573-85-4 | 1.25 µgSn/kg | # Not Determined | 20 | 130 |
| EP131A: Organochlorine Pesticides (QCLot: 2220355) | | | | | | | |
| EM1903075-001 | CPB1 a | EP131A: Aldrin | 309-00-2 | 5 µg/kg | 34.2 | 23 | 153 |
| | | EP131A: alpha-BHC | 319-84-6 | 5 µg/kg | 38.4 | 18 | 156 |
| | | EP131A: beta-BHC | 319-85-7 | 5 µg/kg | 43.5 | 25 | 153 |
| | | EP131A: delta-BHC | 319-86-8 | 5 µg/kg | 39.0 | 25 | 147 |
| | | EP131A: 4,4'-DDD | 72-54-8 | 5 µg/kg | 41.1 | 26 | 150 |
| | | EP131A: 4,4'-DDE | 72-55-9 | 5 µg/kg | 40.0 | 31 | 125 |
| | | EP131A: 4,4'-DDT | 50-29-3 | 5 µg/kg | 85.0 | 23 | 163 |
| | | EP131A: Dieldrin | 60-57-1 | 5 µg/kg | 42.2 | 30 | 140 |
| | | EP131A: alpha-Endosulfan | 959-98-8 | 5 µg/kg | 43.3 | 29 | 135 |
| | | EP131A: beta-Endosulfan | 33213-65-9 | 5 µg/kg | 44.9 | 23 | 141 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP131A: Organochlorine Pesticides (QCLot: 2220355) - continued | | | | | | | |
| EM1903075-001 | CPB1 a | EP131A: Endosulfan sulfate | 1031-07-8 | 5 µg/kg | 54.8 | 16 | 156 |
| | | EP131A: Endrin | 72-20-8 | 5 µg/kg | 92.7 | 18 | 162 |
| | | EP131A: Endrin aldehyde | 7421-93-4 | 5 µg/kg | 28.8 | 20 | 116 |
| | | EP131A: Endrin ketone | 53494-70-5 | 5 µg/kg | 34.7 | 13 | 151 |
| | | EP131A: Heptachlor | 76-44-8 | 5 µg/kg | 38.8 | 24 | 170 |
| | | EP131A: Heptachlor epoxide | 1024-57-3 | 5 µg/kg | 34.8 | 28 | 140 |
| | | EP131A: Hexachlorobenzene (HCB) | 118-74-1 | 5 µg/kg | 22.4 | 18 | 144 |
| | | EP131A: gamma-BHC | 58-89-9 | 5 µg/kg | 35.4 | 22 | 158 |
| | | EP131A: Methoxychlor | 72-43-5 | 5 µg/kg | 57.7 | 24 | 158 |
| | | EP131A: cis-Chlordane | 5103-71-9 | 5 µg/kg | 43.3 | 27 | 139 |
| | | EP131A: trans-Chlordane | 5103-74-2 | 5 µg/kg | 49.2 | 30 | 138 |
| EP131B: Polychlorinated Biphenyls (as Aroclors) (QCLot: 2220354) | | | | | | | |
| EM1903075-001 | CPB1 a | EP131B: Total Polychlorinated biphenyls | ---- | 50 µg/kg | 56.8 | 44 | 136 |
| | | EP131B: Aroclor 1254 | 11097-69-1 | 50 µg/kg | 56.8 | 44 | 136 |
| EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 2220359) | | | | | | | |
| EM1903075-001 | CPB1 a | EP132B-SD: Naphthalene | 91-20-3 | 25 µg/kg | 93.7 | 70 | 130 |
| | | EP132B-SD: 2-Methylnaphthalene | 91-57-6 | 25 µg/kg | 95.9 | 70 | 130 |
| | | EP132B-SD: Acenaphthylene | 208-96-8 | 25 µg/kg | 99.2 | 70 | 130 |
| | | EP132B-SD: Acenaphthene | 83-32-9 | 25 µg/kg | 119 | 70 | 130 |
| | | EP132B-SD: Fluorene | 86-73-7 | 25 µg/kg | 111 | 70 | 130 |
| | | EP132B-SD: Phenanthrene | 85-01-8 | 25 µg/kg | 97.3 | 70 | 130 |
| | | EP132B-SD: Anthracene | 120-12-7 | 25 µg/kg | 98.6 | 70 | 130 |
| | | EP132B-SD: Fluoranthene | 206-44-0 | 25 µg/kg | 88.7 | 70 | 130 |
| | | EP132B-SD: Pyrene | 129-00-0 | 25 µg/kg | 115 | 70 | 130 |
| | | EP132B-SD: Benz(a)anthracene | 56-55-3 | 25 µg/kg | 108 | 70 | 130 |
| | | EP132B-SD: Chrysene | 218-01-9 | 25 µg/kg | 95.7 | 70 | 130 |
| | | EP132B-SD: Benzo(b+j)fluoranthene | 205-99-2 | 25 µg/kg | 108 | 70 | 130 |
| | | | 205-82-3 | | | | |
| | | EP132B-SD: Benzo(k)fluoranthene | 207-08-9 | 25 µg/kg | 86.8 | 70 | 130 |
| | | EP132B-SD: Benzo(e)pyrene | 192-97-2 | 25 µg/kg | 101 | 70 | 130 |
| | | EP132B-SD: Benzo(a)pyrene | 50-32-8 | 25 µg/kg | 98.1 | 70 | 130 |
| | | EP132B-SD: Perylene | 198-55-0 | 25 µg/kg | 100 | 70 | 130 |
| | | EP132B-SD: Benzo(g,h,i)perylene | 191-24-2 | 25 µg/kg | 100 | 70 | 130 |
| | | EP132B-SD: Dibenz(a,h)anthracene | 53-70-3 | 25 µg/kg | 103 | 70 | 130 |
| | | EP132B-SD: Indeno(1,2,3.cd)pyrene | 193-39-5 | 25 µg/kg | 103 | 70 | 130 |
| | | EP132B-SD: Coronene | 191-07-1 | 25 µg/kg | 111 | 70 | 130 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2231485) | | | | | | | |
| EM1903075-001 | CPB1 a | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.00125 mg/kg | 70.0 | 50 | 130 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|-------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2231485) - continued | | | | | | | |
| EM1903075-001 | CPB1 a | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.00125 mg/kg | 63.2 | 50 | 130 |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.00125 mg/kg | 73.2 | 50 | 130 |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.00125 mg/kg | 72.0 | 50 | 130 |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.00125 mg/kg | 56.8 | 50 | 130 |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.00125 mg/kg | 58.0 | 50 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2231485) | | | | | | | |
| EM1903075-001 | CPB1 a | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.00625 mg/kg | 57.1 | 30 | 130 |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.00125 mg/kg | 71.2 | 50 | 130 |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.00125 mg/kg | 73.6 | 50 | 130 |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.00125 mg/kg | 69.2 | 50 | 130 |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.00125 mg/kg | 76.0 | 50 | 130 |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.00125 mg/kg | 72.0 | 50 | 130 |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.00125 mg/kg | 66.8 | 50 | 130 |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.00125 mg/kg | 64.8 | 50 | 130 |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.00125 mg/kg | 72.0 | 50 | 130 |
| | | EP231X: Perfluorotridecanoic acid (PFTeDA) | 72629-94-8 | 0.00125 mg/kg | 66.4 | 30 | 130 |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.00312 mg/kg | 67.3 | 30 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2231485) | | | | | | | |
| EM1903075-001 | CPB1 a | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.00125 mg/kg | 66.4 | 50 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.00312 mg/kg | 71.0 | 30 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.00312 mg/kg | 95.2 | 30 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.00312 mg/kg | 69.7 | 30 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.00312 mg/kg | 74.8 | 30 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.00125 mg/kg | 72.8 | 30 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.00125 mg/kg | 89.6 | 30 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2231485) | | | | | | | |
| EM1903075-001 | CPB1 a | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.00125 mg/kg | 90.0 | 50 | 130 |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.00125 mg/kg | 62.8 | 50 | 130 |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.00125 mg/kg | 82.4 | 50 | 130 |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.00125 mg/kg | 82.8 | 50 | 130 |

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|-------------------|-------------------------|------------------------------------|
| Work Order | : EM1903075 | Page | : 1 of 10 |
| Client | : CEE CONSULTANTS | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | Telephone | : +61-3-8549 9600 |
| Project | : CRIB POINT | Date Samples Received | : 01-Mar-2019 |
| Site | : ---- | Issue Date | : 19-Mar-2019 |
| Sampler | : ---- | No. of samples received | : 12 |
| Order number | : | No. of samples analysed | : 12 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|---|----------------------|------------------|---------------------------|------------|----------------|---------|--|
| Matrix Spike (MS) Recoveries | | | | | | | |
| EP080-SD / EP071-SD: Total Petroleum Hydrocarbons | EM1903075--001 | CPB1 a | C10 - C14 Fraction | ---- | 66.4 % | 70-130% | Recovery less than lower data quality objective |
| EP090: Organotin Compounds | EM1903075--002 | CPB1 b | Monobutyltin | 78763-54-9 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |
| EP090: Organotin Compounds | EM1903075--002 | CPB1 b | Dibutyltin | 1002-53-5 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |
| EP090: Organotin Compounds | EM1903075--002 | CPB1 b | Tributyltin | 56573-85-4 | Not Determined | ---- | MS recovery not determined, background level greater than or equal to 4x spike level. |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-----------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055) | | 01-Mar-2019 | ---- | ---- | ---- | 07-Mar-2019 | 15-Mar-2019 | ✔ |
| CPB1 a, | CPB1 b, | | | | | | | |
| CPB1 c, | CPB2 a, | | | | | | | |
| CPB2 bS1, | CPB2 bS2, | | | | | | | |
| CPB2 CD1, | CPB2 CD2, | | | | | | | |
| NRA, | NRB, | | | | | | | |
| SRA, | SRB | | | | | | | |
| EA150: Particle Sizing | | | | | | | | |
| Snap Lock Bag (EA150H) | | 01-Mar-2019 | ---- | ---- | ---- | 13-Mar-2019 | 28-Aug-2019 | ✔ |
| CPB1 a, | CPB1 b, | | | | | | | |
| CPB1 c, | CPB2 a, | | | | | | | |
| CPB2 bS1, | CPB2 bS2, | | | | | | | |
| CPB2 CD1, | CPB2 CD2, | | | | | | | |
| NRA, | NRB, | | | | | | | |
| SRA, | SRB | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA150: Soil Classification based on Particle Size | | | | | | | | |
| Snap Lock Bag (EA150H)
CPB1 a,
CPB1 c,
CPB2 bS1,
CPB2 CD1,
NRA,
SRA, | CPB1 b,
CPB2 a,
CPB2 bS2,
CPB2 CD2,
NRB,
SRB | 01-Mar-2019 | ---- | ---- | ---- | 13-Mar-2019 | 28-Aug-2019 | ✓ |
| EA152: Soil Particle Density | | | | | | | | |
| Snap Lock Bag (EA152)
CPB1 a,
CPB1 c,
CPB2 bS1,
CPB2 CD1,
NRA,
SRA, | CPB1 b,
CPB2 a,
CPB2 bS2,
CPB2 CD2,
NRB,
SRB | 01-Mar-2019 | ---- | ---- | ---- | 13-Mar-2019 | 28-Aug-2019 | ✓ |
| EG005(ED093)-SD: Total Metals in Sediments by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005-SD)
CPB1 a,
CPB1 c,
CPB2 bS1,
CPB2 CD1,
NRA,
SRA, | CPB1 b,
CPB2 a,
CPB2 bS2,
CPB2 CD2,
NRB,
SRB | 01-Mar-2019 | 12-Mar-2019 | 28-Aug-2019 | ✓ | 12-Mar-2019 | 28-Aug-2019 | ✓ |
| EG020-SD: Total Metals in Sediments by ICPMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG020-SD)
CPB1 a,
CPB1 c,
CPB2 bS1,
CPB2 CD1,
NRA,
SRA, | CPB1 b,
CPB2 a,
CPB2 bS2,
CPB2 CD2,
NRB,
SRB | 01-Mar-2019 | 12-Mar-2019 | 28-Aug-2019 | ✓ | 12-Mar-2019 | 28-Aug-2019 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T-LL)
CPB1 a,
CPB1 c,
CPB2 bS1,
CPB2 CD1,
NRA,
SRA, | CPB1 b,
CPB2 a,
CPB2 bS2,
CPB2 CD2,
NRB,
SRB | 01-Mar-2019 | 12-Mar-2019 | 29-Mar-2019 | ✓ | 14-Mar-2019 | 29-Mar-2019 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP003: Total Organic Carbon (TOC) in Soil | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP003) | | 01-Mar-2019 | 15-Mar-2019 | 29-Mar-2019 | ✓ | 15-Mar-2019 | 29-Mar-2019 | ✓ |
| CPB1 a,
CPB1 c,
CPB2 bS1,
CPB2 CD1,
NRA,
SRA, | CPB1 b,
CPB2 a,
CPB2 bS2,
CPB2 CD2,
NRB,
SRB | | | | | | | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-SD) | | 01-Mar-2019 | 07-Mar-2019 | 15-Mar-2019 | ✓ | 12-Mar-2019 | 16-Apr-2019 | ✓ |
| CPB1 a,
CPB1 c,
CPB2 bS1,
CPB2 CD1,
NRA,
SRA, | CPB1 b,
CPB2 a,
CPB2 bS2,
CPB2 CD2,
NRB,
SRB | | | | | | | |
| EP080-SD / EP071-SD: Total Petroleum Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP080-SD) | | 01-Mar-2019 | 07-Mar-2019 | 15-Mar-2019 | ✓ | 07-Mar-2019 | 15-Mar-2019 | ✓ |
| CPB1 a,
CPB1 c,
CPB2 bS1,
CPB2 CD1,
NRA,
SRA, | CPB1 b,
CPB2 a,
CPB2 bS2,
CPB2 CD2,
NRB,
SRB | | | | | | | |
| Soil Glass Jar - Unpreserved (EP071-SD) | | 01-Mar-2019 | 07-Mar-2019 | 15-Mar-2019 | ✓ | 12-Mar-2019 | 16-Apr-2019 | ✓ |
| CPB1 a,
CPB1 c,
CPB2 bS1,
CPB2 CD1,
NRA,
SRA, | CPB1 b,
CPB2 a,
CPB2 bS2,
CPB2 CD2,
NRB,
SRB | | | | | | | |
| EP080-SD / EP071-SD: Total Recoverable Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP080-SD) | | 01-Mar-2019 | 07-Mar-2019 | 15-Mar-2019 | ✓ | 07-Mar-2019 | 15-Mar-2019 | ✓ |
| CPB1 a,
CPB1 c,
CPB2 bS1,
CPB2 CD1,
NRA,
SRA, | CPB1 b,
CPB2 a,
CPB2 bS2,
CPB2 CD2,
NRB,
SRB | | | | | | | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-----------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080-SD: BTEXN | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP080-SD) | | 01-Mar-2019 | 07-Mar-2019 | 15-Mar-2019 | ✓ | 07-Mar-2019 | 15-Mar-2019 | ✓ |
| CPB1 a, | CPB1 b, | | | | | | | |
| CPB1 c, | CPB2 a, | | | | | | | |
| CPB2 bS1, | CPB2 bS2, | | | | | | | |
| CPB2 CD1, | CPB2 CD2, | | | | | | | |
| NRA, | NRB, | | | | | | | |
| SRA, | SRB | | | | | | | |
| EP090: Organotin Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP090) | | 01-Mar-2019 | 07-Mar-2019 | 15-Mar-2019 | ✓ | 11-Mar-2019 | 16-Apr-2019 | ✓ |
| CPB1 a, | CPB1 b, | | | | | | | |
| CPB1 c, | CPB2 a, | | | | | | | |
| CPB2 bS1, | CPB2 bS2, | | | | | | | |
| CPB2 CD1, | CPB2 CD2, | | | | | | | |
| NRA, | NRB, | | | | | | | |
| SRA, | SRB | | | | | | | |
| EP131A: Organochlorine Pesticides | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP131A) | | 01-Mar-2019 | 07-Mar-2019 | 15-Mar-2019 | ✓ | 13-Mar-2019 | 16-Apr-2019 | ✓ |
| CPB1 a, | CPB1 b, | | | | | | | |
| CPB1 c, | CPB2 a, | | | | | | | |
| CPB2 bS1, | CPB2 bS2, | | | | | | | |
| CPB2 CD1, | CPB2 CD2, | | | | | | | |
| NRA, | NRB, | | | | | | | |
| SRA, | SRB | | | | | | | |
| EP131B: Polychlorinated Biphenyls (as Aroclors) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP131B) | | 01-Mar-2019 | 07-Mar-2019 | 15-Mar-2019 | ✓ | 13-Mar-2019 | 16-Apr-2019 | ✓ |
| CPB1 a, | CPB1 b, | | | | | | | |
| CPB1 c, | CPB2 a, | | | | | | | |
| CPB2 bS1, | CPB2 bS2, | | | | | | | |
| CPB2 CD1, | CPB2 CD2, | | | | | | | |
| NRA, | NRB, | | | | | | | |
| SRA, | SRB | | | | | | | |
| EP132B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP132B-SD) | | 01-Mar-2019 | 07-Mar-2019 | 15-Mar-2019 | ✓ | 11-Mar-2019 | 16-Apr-2019 | ✓ |
| CPB1 a, | CPB1 b, | | | | | | | |
| CPB1 c, | CPB2 a, | | | | | | | |
| CPB2 bS1, | CPB2 bS2, | | | | | | | |
| CPB2 CD1, | CPB2 CD2, | | | | | | | |
| NRA, | NRB, | | | | | | | |
| SRA, | SRB | | | | | | | |

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-----------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| Snap Lock Bag (EP231X) | | 01-Mar-2019 | 13-Mar-2019 | 28-Aug-2019 | ✓ | 14-Mar-2019 | 22-Apr-2019 | ✓ |
| CPB1 a, | CPB1 b, | | | | | | | |
| CPB1 c, | CPB2 a, | | | | | | | |
| CPB2 bS1, | CPB2 bS2, | | | | | | | |
| CPB2 CD1, | CPB2 CD2, | | | | | | | |
| NRA, | NRB, | | | | | | | |
| SRB, | SRB | | | | | | | |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| Snap Lock Bag (EP231X) | | 01-Mar-2019 | 13-Mar-2019 | 28-Aug-2019 | ✓ | 14-Mar-2019 | 22-Apr-2019 | ✓ |
| CPB1 a, | CPB1 b, | | | | | | | |
| CPB1 c, | CPB2 a, | | | | | | | |
| CPB2 bS1, | CPB2 bS2, | | | | | | | |
| CPB2 CD1, | CPB2 CD2, | | | | | | | |
| NRA, | NRB, | | | | | | | |
| SRB, | SRB | | | | | | | |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| Snap Lock Bag (EP231X) | | 01-Mar-2019 | 13-Mar-2019 | 28-Aug-2019 | ✓ | 14-Mar-2019 | 22-Apr-2019 | ✓ |
| CPB1 a, | CPB1 b, | | | | | | | |
| CPB1 c, | CPB2 a, | | | | | | | |
| CPB2 bS1, | CPB2 bS2, | | | | | | | |
| CPB2 CD1, | CPB2 CD2, | | | | | | | |
| NRA, | NRB, | | | | | | | |
| SRB, | SRB | | | | | | | |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | |
| Snap Lock Bag (EP231X) | | 01-Mar-2019 | 13-Mar-2019 | 28-Aug-2019 | ✓ | 14-Mar-2019 | 22-Apr-2019 | ✓ |
| CPB1 a, | CPB1 b, | | | | | | | |
| CPB1 c, | CPB2 a, | | | | | | | |
| CPB2 bS1, | CPB2 bS2, | | | | | | | |
| CPB2 CD1, | CPB2 CD2, | | | | | | | |
| NRA, | NRB, | | | | | | | |
| SRB, | SRB | | | | | | | |
| EP231P: PFAS Sums | | | | | | | | |
| Snap Lock Bag (EP231X) | | 01-Mar-2019 | 13-Mar-2019 | 28-Aug-2019 | ✓ | 14-Mar-2019 | 22-Apr-2019 | ✓ |
| CPB1 a, | CPB1 b, | | | | | | | |
| CPB1 c, | CPB2 a, | | | | | | | |
| CPB2 bS1, | CPB2 bS2, | | | | | | | |
| CPB2 CD1, | CPB2 CD2, | | | | | | | |
| NRA, | NRB, | | | | | | | |
| SRB, | SRB | | | | | | | |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|-----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Organochlorine Pesticides (Ultra-trace) | EP131A | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Organotin Analysis | EP090 | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAHs in Sediments by GCMS(SIM) | EP132B-SD | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB's (Ultra-trace) | EP131B | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fe and Al in Sediments by ICPAES | EG005-SD | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS (Low Level) | EG035T-LL | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals in Sediments by ICPMS | EG020-SD | 3 | 12 | 25.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Organic Carbon | EP003 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TPH - Semivolatile Fraction | EP071-SD | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX in Sediments | EP080-SD | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Organochlorine Pesticides (Ultra-trace) | EP131A | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Organotin Analysis | EP090 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAHs in Sediments by GCMS(SIM) | EP132B-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB's (Ultra-trace) | EP131B | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fe and Al in Sediments by ICPAES | EG005-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS (Low Level) | EG035T-LL | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals in Sediments by ICPMS | EG020-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Organic Carbon | EP003 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TPH - Semivolatile Fraction | EP071-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX in Sediments | EP080-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Organochlorine Pesticides (Ultra-trace) | EP131A | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Organotin Analysis | EP090 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAHs in Sediments by GCMS(SIM) | EP132B-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB's (Ultra-trace) | EP131B | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fe and Al in Sediments by ICPAES | EG005-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS (Low Level) | EG035T-LL | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals in Sediments by ICPMS | EG020-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Organic Carbon | EP003 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TPH - Semivolatile Fraction | EP071-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX in Sediments | EP080-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|-----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Matrix Spikes (MS) | | | | | | | |
| Organochlorine Pesticides (Ultra-trace) | EP131A | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Organotin Analysis | EP090 | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PAHs in Sediments by GCMS(SIM) | EP132B-SD | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| PCB's (Ultra-trace) | EP131B | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS (Low Level) | EG035T-LL | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals in Sediments by ICPMS | EG020-SD | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TPH - Semivolatile Fraction | EP071-SD | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX in Sediments | EP080-SD | 1 | 12 | 8.33 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|-----------|--------|---|
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Particle Size Analysis by Hydrometer | EA150H | SOIL | Particle Size Analysis by Hydrometer according to AS1289.3.6.3 - 2003 |
| Soil Particle Density | EA152 | SOIL | Soil Particle Density by AS 1289.3.5.1-2006 : Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method |
| Total Fe and Al in Sediments by ICPAES | EG005-SD | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3). LORs per NODG |
| Total Metals in Sediments by ICPMS | EG020-SD | SOIL | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. Analyte list and LORs per NODG. |
| Total Mercury by FIMS (Low Level) | EG035T-LL | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Organic Carbon | EP003 | SOIL | In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a LECO furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO ₂) is automatically measured by infra-red detector. |
| TPH - Semivolatile Fraction | EP071-SD | SOIL | In house: Referenced to USEPA SW 846 - 8270D. Extracts are analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |
| TRH Volatiles/BTEX in Sediments | EP080-SD | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. |
| Organotin Analysis | EP090 | SOIL | In house: Referenced to USEPA SW 846 - 8270D Prepared sample extracts are analysed by GC/MS coupled with high volume injection, and quantified against an established calibration curve. |
| Organochlorine Pesticides (Ultra-trace) | EP131A | SOIL | In house: Referenced to USEPA Method 3640 (GPC cleanup),3620 (Florisil), 8081/8082 (GC/μECD/μECD) This technique is compliant with NEPM (2013) Schedule B(3) |
| PCB's (Ultra-trace) | EP131B | SOIL | In house: Referenced to USEPA Method 3640 (GPC cleanup),3620 (Florisil), 8081/8082 (GC/μECD/μECD) This technique is compliant with NEPM (2013) Schedule B(3) |
| PAHs in Sediments by GCMS(SIM) | EP132B-SD | SOIL | In house: Referenced to USEPA 8270D GCMS Capillary column, SIM mode using large volume programmed temperature vaporisation injection. |



| Analytical Methods | Method | Matrix | Method Descriptions |
|--|------------|--------|---|
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | SOIL | In-House. A portion of soil is extracted with MTBE. The extract is taken to dryness, made up in mobile phase. Analysis is by LC/MSMS, ESI Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1 |
| Preparation Methods | Method | Matrix | Method Descriptions |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Sample Extraction for PFAS | EP231-PR | SOIL | In house |
| Dry and Pulverise (up to 100g) | GEO30 | SOIL | # |
| Methanolic Extraction of Soils for Purge and Trap | ORG16 | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids/ Sample Cleanup | ORG17A-UTP | SOIL | In house: Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. Samples are extracted, concentrated (by KD) and exchanged into an appropriate solvent for GPC and florisil cleanup as required. |
| Tumbler Extraction of Solids for LVI (Non-concentrating) | ORG17D | SOIL | In house: 10g of sample, Na2SO4 and surrogate are extracted with 50mL 1:1 DCM/Acetone by end over end tumbling. An aliquot is concentrated by nitrogen blowdown to a reduced volume for analysis if required. |
| Organotin Sample Preparation | ORG35 | SOIL | In house: 20g sample is spiked with surrogate and leached in a methanol:acetic acid:UHP water mix and vacuum filtered. Reagents and solvents are added to the sample and the mixture tumbled. The butyltin compounds are simultaneously derivatised and extracted. The extract is further extracted with petroleum ether. The resultant extracts are combined and concentrated for analysis. |

#667275

AECOM

Q4AN(EV)-007-FM1

FQM - Generic Chain of Custody Form

| | | | | | | | |
|--|---------------|--|---------------|--|---------------|--|--|
| CONSULTANT: AECOM | | ADDRESS: Melbourne | | SAMPLER: | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: Crib Point | | MOBILE: | | ALS | |
| PROJECT NUMBER & TASK CODE: 60592617 | | P.O. NO.: | | EMAIL REPORT TO: | | | |
| RESULTS REQUIRED (Date): Standard TAT | | QUOTE NO: EN/004/16 | | ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices) | | | |
| FOR LABORATORY USE ONLY | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | Notes: e.g. Highly contaminated sample
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc. | |
| COOLER SEAL (circle as appropriate) | | | | | | | |
| Intact: Yes No N/A | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | |
| CHILLED: Yes No | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | CONTAINER INFORMATION | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| | CPB2e | Sed | | | | | |
| | CPB2d | Sed | | | | | |
| | CPB2f | Sed | | | | | |
| | CPB2g | Sed | | | | | |
| | CPB2h i | Sed | | | | | |
| | CPB2h ii | Sed | | | | | |
| | CPB2h iii | Sed | | | | | |
| | CPB2i | Sed | | | | | |
| | CPB2j | Sed | | | | | |
| | CPB2k i | Sed | | | | | |
| | CPB2k ii | Sed | | | | | |
| | CPB2k iii | Sed | | | | | |
| | CPB2l | Sed | | | | | |
| Subcon / Forward Lab / Split WO | | | | | | | |
| Lab / Analysis: | | | | | | | |
| Organised By / Date: | | | | | | | |
| Relinquished By / Date: | | | | | | | |
| Connote / Courier: | | | | | | | |
| WO No: | | | | | | | |
| Attached By PO / Internal Sheet: | | | | | | | |
| RELINQUISHED BY: | | | | | | | |
| Name: Scott | Date: 19/7/19 | Name: Euforins | Date: 23/7/19 | Name: Euforins | Date: 23/7/19 | METHOD OF SHIPMENT | |
| Of: ALS | Time: 19:00 | Of: Euforins | Time: 2:31 PM | Of: Euforins | Time: 18:15 | Con' Note No: | |
| Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic | | | | | | Transport Co: | |
| V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; | | | | | | | |
| F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. | | | | | | | |
| Soil Container Codes: Jar = Unpreserved glass jar | | | | | | | |

Environmental Division
Sydney
Work Order Reference
ES1922917



Telephone : + 61-2-8784 8555

Enviro Sample NSW

From: Enviro Sample Vic
Sent: Wednesday, 24 July 2019 11:14 AM
To: Enviro Sample NSW
Cc: [REDACTED]
Subject: FW: Can you please provide analysis for attached COC

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Sydney,

Please see below for analysis for report 667275.

Thanks,
 Canh

Sample Receipt

Eurofins | mgt
 6 Monterey Rd
 Dandenong South 3175
 AUSTRALIA
 Phone : +61 3 8564 5000

Email : EnviroSampleVic@eurofins.com
 Website : <http://environment.eurofins.com.au>

From: [REDACTED]@aecom.com]
Sent: Wednesday, 24 July 2019 9:45 AM
To: [REDACTED]
Cc: Enviro Sample Vic; [REDACTED]
Subject: RE: Can you please provide analysis for attached COC

Hi [REDACTED]

Please find below.

| Parameter | ALS Code |
|---|-----------------|
| Organotins (TBT) | EP090 (solids) |
| Total Mercury by FIMS - Low Level (SOLID) | EG035T-LL |
| Total Metals (Metals - Trace: Ag, Cd, Se, Co, Sb, Cu, Pb, Zn, Cr, Ni, As, V, Mn) in Sediments by ICPMS (NODG) | EG020-SD |
| Particle Sizing to 1 µm plus Soil Particle Density (SPD for <2.36mm fraction only (Sieve and Hydrometer analysis incl graphs) with Hydrometer + Soil Particle Density | EA150H/EA152 |
| Total Iron in Sediments by ICPAES (NODG) | EG005-SD |
| Total Organic Carbon (TOC) in Soil | EP003 |
| Ultra-trace PAHs in Sediments | EP132B-SD |
| PFAS - Full Suite (28 analytes) | EP231X (solids) |

Please do not hesitate to call me if you require further information. Many thanks!

Rupany
 24/6/7

[illegible]



REPORT OF ANALYSIS

Page: 1 of 2

Report No. RN1241582

| | |
|--|---|
| Client : EUROFINS MGT
6 Monterey Road
Dandenong South VIC 3175 | Job No. : EURO26/190724
Quote No. : QT-02018
Order No. : 19-296-667275
Date Received : 24-JUL-2019
Sampled By : CLIENT |
| Attention : [REDACTED]
Project Name :
Your Client Services Manager : Tim Reddan | Phone : 03 9644 4854 |

| | | |
|--------------------|-------------------|---------------------------|
| Lab Reg No. | Sample Ref | Sample Description |
| N19/018620 | S19-JI32119 | SOIL CPB2H_III |

| | | | | | | |
|------------------|-------|--------------|--|--|--|--------|
| Lab Reg No. | | N19/018620 | | | | |
| Date Sampled | | Not Provided | | | | |
| Sample Reference | | S19-JI32119 | | | | |
| | Units | | | | | Method |

| | | | | | | |
|-------------------------|------|-------|--|--|--|-------|
| Organotins | | | | | | |
| Monobutyltin as Sn | ng/g | < 0.5 | | | | NR_35 |
| Dibutyltin as Sn | ng/g | < 0.5 | | | | NR_35 |
| Tributyltin as Sn | ng/g | < 0.5 | | | | NR_35 |
| Surrogate: Tripropyltin | %REC | 94 | | | | NR_35 |

| | | | | | | |
|----------------|--|-------------|--|--|--|--|
| Dates | | | | | | |
| Date extracted | | 29-JAN-2019 | | | | |
| Date analysed | | 1-AUG-2019 | | | | |

[REDACTED] Section Manager
Organic - NSW
Accreditation No. 198

02-AUG-2019

| | | | | | | |
|------------------|-------|--------------|--|--|--|--------|
| Lab Reg No. | | N19/018620 | | | | |
| Date Sampled | | Not Provided | | | | |
| Sample Reference | | S19-JI32119 | | | | |
| | Units | | | | | Method |

| | | | | | | |
|-----------------------|---|------|--|--|--|--------|
| Trace Elements | | | | | | |
| Total Solids | % | 62.0 | | | | NT2_49 |

REPORT OF ANALYSIS

Page: 2 of 2
Report No. RN1241582

| | | | | | | |
|------------------|-------|--------------|--|--|--|--------|
| Lab Reg No. | Units | N19/018620 | | | | Method |
| Date Sampled | | Not Provided | | | | |
| Sample Reference | | S19-JI32119 | | | | |



Inorganics - NSW
Accreditation No. 198

02-AUG-2019

All results are expressed on a dry weight basis.



ACCREDITED FOR
**TECHNICAL
COMPETENCE**

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) tested.

This Report supersedes reports: *RN1241399* *RN1241564*

Measurement Uncertainty is available upon request.

Note: Where sampling dates are not provided NMI is unable to determine compliance to any applicable Holding Time requirements

Chemical Accreditation 198: 105 Delhi Road, North Ryde, NSW, 2113

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : ES1922917**

| | | | |
|--------------|---|--------------|--|
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Sydney |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 277-289 Woodpark Road Smithfield
NSW Australia 2164 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@ALSGlobal.com |
| Telephone | : ---- | Telephone | : +61 2 8784 8555 |
| Facsimile | : ---- | Facsimile | : +61-2-8784 8500 |
| Project | : 60592617 | Page | : 1 of 4 |
| Order number | : 60592617 | Quote number | : EB2017AECOMAU0014 (EN/004/16) |
| C-O-C number | : ---- | QC Level | : NEPM 2013 B3 & ALS QC Standard |
| Site | : CRIB POINT | | |
| Sampler | : | | |

Dates

| | | | |
|---------------------------|---------------------|--------------------------|----------------------|
| Date Samples Received | : 20-Jul-2019 10:30 | Issue Date | : 24-Jul-2019 |
| Client Requested Due Date | : 01-Aug-2019 | Scheduled Reporting Date | : 01-Aug-2019 |

Delivery Details

| | | | |
|----------------------|-------------|------------------------------------|-----------------------|
| Mode of Delivery | : Undefined | Security Seal | : Intact. |
| No. of coolers/boxes | : 1 | Temperature | : 4.0°C - Ice present |
| Receipt Detail | : | No. of samples received / analysed | : 12 / 12 |

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- 24/7/19: This is an updated SRN which indicates the updated IDs for sample 11 and 12 as requested.
- **ES1922917-011, 012 id on the COC : CPB2k_ii and CPB2k_iii , but received labelled as CPB2f_ii and CPB2f_iii on the jar , please confirm**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **EA150H/152 and EP090 analysis will be conducted by ALS Brisbane.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

| Method
□□□ □□□□ | Sample Container Received | Preferred Sample Container for Analysis |
|--|---|---|
| Particle Size Analysis by Hydrometer : EA150H | | |
| CPB2e | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Snap Lock Bag |
| CPB2d | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Snap Lock Bag |
| CPB2f | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Snap Lock Bag |
| CPB2g | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Snap Lock Bag |
| CPB2h_i | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Snap Lock Bag |
| CPB2h_ii | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Snap Lock Bag |
| CPB2i | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Snap Lock Bag |
| CPB2j | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Snap Lock Bag |
| CPB2k_j | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Snap Lock Bag |
| CPB2f_ii | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Snap Lock Bag |
| CPB2f_iii | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Snap Lock Bag |
| CPB2l | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Snap Lock Bag |
| Soil Particle Density : EA152 | | |
| CPB2e | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Dried soil |
| CPB2d | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Dried soil |
| CPB2f | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Dried soil |
| CPB2g | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Dried soil |
| CPB2h_i | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Dried soil |
| CPB2h_ii | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Dried soil |
| CPB2i | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Dried soil |
| CPB2j | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Dried soil |
| CPB2k_j | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Dried soil |
| CPB2f_ii | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Dried soil |
| CPB2f_iii | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Dried soil |
| CPB2l | - Snap Lock Bag - ACM/Asbestos Grab Bag | - Dried soil |

Summary of Sample(s) and Requested Analysis



Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | SOIL - EA055-103 Moisture Content | SOIL - EG005-SD Total Iron and Aluminium in Sediments by | SOIL - EG020-SD Total Metals in Sediments by ICPMS (NODG) | SOIL - EG035T-LL Total Mercury by FIMS - Low Level (SOLID) | SOIL - EP003 Total Organic Carbon (TOC) in Soil | SOIL - EP090 (solids) Organotins | SOIL - EP132B-SD Ultra-trace PAHs in Sediments |
|----------------------|-----------------------------|------------------|-----------------------------------|--|---|--|---|----------------------------------|--|
| ES1922917-001 | 18-Jul-2019 00:00 | CPB2e | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ES1922917-002 | 18-Jul-2019 00:00 | CPB2d | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ES1922917-003 | 18-Jul-2019 00:00 | CPB2f | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ES1922917-004 | 18-Jul-2019 00:00 | CPB2g | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ES1922917-005 | 18-Jul-2019 00:00 | CPB2h_i | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ES1922917-006 | 18-Jul-2019 00:00 | CPB2h_ii | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ES1922917-008 | 18-Jul-2019 00:00 | CPB2i | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ES1922917-009 | 18-Jul-2019 00:00 | CPB2j | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ES1922917-010 | 18-Jul-2019 00:00 | CPB2k_j | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ES1922917-011 | 18-Jul-2019 00:00 | CPB2f_ii | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ES1922917-012 | 18-Jul-2019 00:00 | CPB2f_iii | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ES1922917-013 | 18-Jul-2019 00:00 | CPB2l | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | SOIL - EA150H/EA152 Particle Sizing with Hydrometer + Soil Particle | SOIL - EP231X (solids) PFAS - Full Suite (28 analytes) |
|----------------------|-----------------------------|------------------|---|--|
| ES1922917-001 | 18-Jul-2019 00:00 | CPB2e | 0 | 0 |
| ES1922917-002 | 18-Jul-2019 00:00 | CPB2d | 0 | 0 |
| ES1922917-003 | 18-Jul-2019 00:00 | CPB2f | 0 | 0 |
| ES1922917-004 | 18-Jul-2019 00:00 | CPB2g | 0 | 0 |
| ES1922917-005 | 18-Jul-2019 00:00 | CPB2h_i | 0 | 0 |
| ES1922917-006 | 18-Jul-2019 00:00 | CPB2h_ii | 0 | 0 |
| ES1922917-008 | 18-Jul-2019 00:00 | CPB2i | 0 | 0 |
| ES1922917-009 | 18-Jul-2019 00:00 | CPB2j | 0 | 0 |
| ES1922917-010 | 18-Jul-2019 00:00 | CPB2k_j | 0 | 0 |
| ES1922917-011 | 18-Jul-2019 00:00 | CPB2f_ii | 0 | 0 |
| ES1922917-012 | 18-Jul-2019 00:00 | CPB2f_iii | 0 | 0 |
| ES1922917-013 | 18-Jul-2019 00:00 | CPB2l | 0 | 0 |

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

ACCOUNTS PAYABLE

- Email AP_CustomerService.ANZ@aecom.com

- Email AP_CustomerService.ANZ@aecom.com

Email
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Q4AN(EV)-007-FM1

Environmental Division
Sydney
Work Order Reference
ES1922917



Telephone : + 61-2-8784 8555

Q4AN(EV)-007-FM1
 FQM - Generic Chain of Custody Form (Q4AN(EV)-007-FM1)
 Revision 1 June 15, 2018

CERTIFICATE OF ANALYSIS

Work Order : **ES1922917**
Client : **AECOM Australia Pty Ltd**
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
 MELBOURNE VIC, AUSTRALIA 3004

Telephone : ----
Project : 60592617
Order number : 60592617
C-O-C number : ----
Sampler : ----
Site : CRIB POINT
Quote number : EN/004/16
No. of samples received : 12
No. of samples analysed : 12

Page : 1 of 18
Laboratory : Environmental Division Sydney
Contact : [REDACTED]
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164

Telephone : +61 2 8784 8555
Date Samples Received : 20-Jul-2019 10:30
Date Analysis Commenced : 25-Jul-2019
Issue Date : 01-Aug-2019 15:33



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Accreditation Category</i> |
|--|----------------------------------|---|
| [REDACTED] | Senior Acid Sulfate Soil Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Senior Spectroscopist | Sydney Inorganics, Smithfield, NSW |
| [REDACTED] | Organic Coordinator | Sydney Organics, Smithfield, NSW |
| [REDACTED] | Inorganic Chemist | Sydney Inorganics, Smithfield, NSW |
| [REDACTED] | LCMS Coordinator | Sydney Organics, Smithfield, NSW |
| [REDACTED] | Senior Inorganic Chemist | Brisbane Acid Sulphate Soils, Stafford, QLD |
| [REDACTED] | Organic Chemist | Brisbane Organics, Stafford, QLD |



□□□ □ □□□ □ □□□

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EP090: Sample 'CPB2d' shows poor matrix spike recovery due to matrix interference.
- EP090: Particular samples have raised LORs for tributyltin due to spectral interference.



□ □ □ □ □ □ □ □ □ □ □ □

| Sub-Matrix: SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2e | CPB2d | CPB2f | CPB2g | CPB2h_i |
|--|------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | ES1922917-001 | ES1922917-002 | ES1922917-003 | ES1922917-004 | ES1922917-005 |
| | | | | | Result | Result | Result | Result | Result |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 0.1 | % | | 28.5 | 30.8 | 29.3 | 31.6 | 30.4 |
| EA150: Particle Sizing | | | | | | | | | |
| +75µm | ---- | 1 | % | | 93 | 94 | 90 | 89 | 92 |
| +150µm | ---- | 1 | % | | 75 | 77 | 58 | 67 | 68 |
| +300µm | ---- | 1 | % | | 49 | 52 | 32 | 39 | 41 |
| +425µm | ---- | 1 | % | | 33 | 31 | 21 | 28 | 27 |
| +600µm | ---- | 1 | % | | 19 | 15 | 12 | 21 | 16 |
| +1180µm | ---- | 1 | % | | 11 | 6 | 6 | 16 | 8 |
| +2.36mm | ---- | 1 | % | | 7 | 4 | 4 | 13 | 3 |
| +4.75mm | ---- | 1 | % | | 5 | 2 | 2 | 8 | 1 |
| +9.5mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| +19.0mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| +37.5mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| +75.0mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| EA150: Soil Classification based on Particle Size | | | | | | | | | |
| Clay (<2 µm) | ---- | 1 | % | | 7 | 5 | 8 | 7 | 6 |
| Silt (2-60 µm) | ---- | 1 | % | | <1 | <1 | 2 | 3 | 1 |
| Sand (0.06-2.00 mm) | ---- | 1 | % | | 85 | 90 | 85 | 76 | 88 |
| Gravel (>2mm) | ---- | 1 | % | | 8 | 5 | 5 | 14 | 5 |
| Cobbles (>6cm) | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| EA152: Soil Particle Density | | | | | | | | | |
| Soil Particle Density (Clay/Silt/Sand) | ---- | 0.01 | g/cm3 | | 2.66 | 2.73 | 2.66 | 2.68 | 2.66 |
| EG005(ED093)-SD: Total Metals in Sediments by ICP-AES | | | | | | | | | |
| Iron | 7439-89-6 | 50 | mg/kg | | 7460 | 7560 | 7950 | 9060 | 8350 |
| EG020-SD: Total Metals in Sediments by ICPMS | | | | | | | | | |
| Antimony | 7440-36-0 | 0.50 | mg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Arsenic | 7440-38-2 | 1.00 | mg/kg | | 10.2 | 11.8 | 11.5 | 12.2 | 13.8 |
| Cadmium | 7440-43-9 | 0.1 | mg/kg | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chromium | 7440-47-3 | 1.0 | mg/kg | | 6.9 | 6.7 | 8.0 | 7.6 | 6.7 |
| Copper | 7440-50-8 | 1.0 | mg/kg | | <1.0 | 1.0 | 1.8 | <1.0 | 1.0 |
| Cobalt | 7440-48-4 | 0.5 | mg/kg | | 1.5 | 1.3 | 1.7 | 1.7 | 1.3 |
| Lead | 7439-92-1 | 1.0 | mg/kg | | 2.8 | 2.2 | 2.7 | 2.1 | 2.0 |
| Manganese | 7439-96-5 | 10 | mg/kg | | 30 | 29 | 31 | 35 | 30 |
| Nickel | 7440-02-0 | 1.0 | mg/kg | | 2.2 | 2.4 | 3.7 | 2.3 | 2.6 |



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| Sub-Matrix: SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2e | CPB2d | CPB2f | CPB2g | CPB2h_i |
|---|-------------------|------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | ES1922917-001 | ES1922917-002 | ES1922917-003 | ES1922917-004 | ES1922917-005 |
| | | | | | Result | Result | Result | Result | Result |
| EG020-SD: Total Metals in Sediments by ICPMS - Continued | | | | | | | | | |
| Selenium | 7782-49-2 | 0.1 | mg/kg | | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 |
| Silver | 7440-22-4 | 0.1 | mg/kg | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Vanadium | 7440-62-2 | 2.0 | mg/kg | | 30.5 | 26.2 | 25.2 | 32.3 | 27.6 |
| Zinc | 7440-66-6 | 1.0 | mg/kg | | 8.2 | 8.4 | 8.4 | 6.1 | 7.7 |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) | | | | | | | | | |
| Mercury | 7439-97-6 | 0.01 | mg/kg | | 0.02 | 0.02 | 0.01 | 0.01 | 0.02 |
| EP003: Total Organic Carbon (TOC) in Soil | | | | | | | | | |
| Total Organic Carbon | ---- | 0.02 | % | | 0.23 | 0.13 | 0.18 | 0.25 | 0.27 |
| EP090: Organotin Compounds | | | | | | | | | |
| Monobutyltin | 78763-54-9 | 1 | µgSn/kg | | <1 | <1 | <1 | <1 | <1 |
| Dibutyltin | 1002-53-5 | 1 | µgSn/kg | | <1 | <1 | <1 | <1 | <1 |
| Tributyltin | 56573-85-4 | 0.5 | µgSn/kg | | <0.5 | <0.8 | <0.5 | <0.5 | <1.0 |
| EP132B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 5 | µg/kg | | <5 | <5 | <5 | <5 | <5 |
| 2-Methylnaphthalene | 91-57-6 | 5 | µg/kg | | <5 | <5 | <5 | <5 | <5 |
| Acenaphthylene | 208-96-8 | 4 | µg/kg | | <4 | 17 | <4 | <4 | <4 |
| Acenaphthene | 83-32-9 | 4 | µg/kg | | 4 | 9 | 4 | 4 | 4 |
| Fluorene | 86-73-7 | 4 | µg/kg | | <4 | 12 | <4 | <4 | <4 |
| Phenanthrene | 85-01-8 | 4 | µg/kg | | <4 | 135 | <4 | <4 | <4 |
| Anthracene | 120-12-7 | 4 | µg/kg | | <4 | 27 | <4 | <4 | <4 |
| Fluoranthene | 206-44-0 | 4 | µg/kg | | <4 | 244 | <4 | <4 | <4 |
| Pyrene | 129-00-0 | 4 | µg/kg | | 5 | 162 | 5 | 5 | 7 |
| Benz(a)anthracene | 56-55-3 | 4 | µg/kg | | <4 | 135 | <4 | <4 | <4 |
| Chrysene | 218-01-9 | 4 | µg/kg | | <4 | 94 | <4 | <4 | <4 |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 4 | µg/kg | | <4 | 109 | <4 | <4 | <4 |
| Benzo(k)fluoranthene | 207-08-9 | 4 | µg/kg | | <4 | 68 | <4 | <4 | <4 |
| Benzo(e)pyrene | 192-97-2 | 4 | µg/kg | | <4 | 56 | <4 | <4 | <4 |
| Benzo(a)pyrene | 50-32-8 | 4 | µg/kg | | <4 | 100 | <4 | <4 | <4 |
| Perylene | 198-55-0 | 4 | µg/kg | | <4 | 23 | <4 | <4 | <4 |
| Benzo(g,h,i)perylene | 191-24-2 | 4 | µg/kg | | <4 | 53 | <4 | <4 | <4 |
| Dibenz(a,h)anthracene | 53-70-3 | 4 | µg/kg | | <4 | 15 | <4 | <4 | <4 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 4 | µg/kg | | <4 | 48 | <4 | <4 | <4 |
| Coronene | 191-07-1 | 5 | µg/kg | | <5 | 6 | <5 | <5 | <5 |
| ^ Sum of PAHs | ---- | 4 | µg/kg | | 9 | 1310 | 9 | 9 | 11 |



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| Sub-Matrix: SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2e | CPB2d | CPB2f | CPB2g | CPB2h_i |
|--|------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | ES1922917-001 | ES1922917-002 | ES1922917-003 | ES1922917-004 | ES1922917-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP132B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 4 | µg/kg | | <4 | 152 | <4 | <4 | <4 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 4 | µg/kg | | 5 | 152 | 5 | 5 | 5 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 4 | µg/kg | | 10 | 152 | 10 | 10 | 10 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | 0.0002 | <0.0002 | 0.0005 |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |

EP231S: PFAS Surrogate

| CPB2e | CPB2d | CPB2f | CPB2g | CPB2h_i |
|-------------------|-------------------|-------------------|-------------------|-------------------|
| 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 |
| ES1922917-001 | ES1922917-002 | ES1922917-003 | ES1922917-004 | ES1922917-005 |
| Result | Result | Result | Result | Result |
| | | | | |
| <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| | | | | |
| <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| | | | | |
| <0.0002 | <0.0002 | 0.0002 | <0.0002 | 0.0005 |
| <0.0002 | <0.0002 | 0.0002 | <0.0002 | 0.0005 |
| <0.0002 | <0.0002 | 0.0002 | <0.0002 | 0.0005 |
| | | | | |
| 77.6 | 86.3 | 63.4 | 72.5 | 84.5 |
| | | | | |
| 85.4 | 111 | 109 | 101 | 102 |
| 108 | 101 | 106 | 93.5 | 112 |
| 97.2 | 86.0 | 96.0 | 80.0 | 103 |
| | | | | |



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|--|------------|--------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Sub-Matrix: SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2e | CPB2d | CPB2f | CPB2g | CPB2h_i |
| Client sampling date / time | | | | | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | ES1922917-001 | ES1922917-002 | ES1922917-003 | ES1922917-004 | ES1922917-005 |
| | | | | | Result | Result | Result | Result | Result |
| EP231S: PFAS Surrogate - Continued | | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | | 80.5 | 69.5 | 76.5 | 76.5 | 79.5 |
| 13C8-PFOA | ---- | 0.0002 | % | | 82.5 | 67.5 | 82.0 | 82.0 | 81.0 |



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| Sub-Matrix: SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2h_ii | CPB2i | CPB2j | CPB2k_j | CPB2f_ii |
|--|------------|------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | ES1922917-006 | ES1922917-008 | ES1922917-009 | ES1922917-010 | ES1922917-011 |
| | | | | | Result | Result | Result | Result | Result |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 0.1 | % | | 30.9 | 29.4 | 34.2 | 46.9 | 36.0 |
| EA150: Particle Sizing | | | | | | | | | |
| +75µm | ---- | 1 | % | | 92 | 86 | 88 | 90 | 89 |
| +150µm | ---- | 1 | % | | 69 | 66 | 66 | 59 | 62 |
| +300µm | ---- | 1 | % | | 45 | 42 | 36 | 28 | 38 |
| +425µm | ---- | 1 | % | | 32 | 30 | 23 | 17 | 24 |
| +600µm | ---- | 1 | % | | 20 | 19 | 14 | 10 | 14 |
| +1180µm | ---- | 1 | % | | 11 | 12 | 8 | 5 | 7 |
| +2.36mm | ---- | 1 | % | | 6 | 9 | 6 | 3 | 4 |
| +4.75mm | ---- | 1 | % | | 4 | 4 | 2 | <1 | 1 |
| +9.5mm | ---- | 1 | % | | 2 | <1 | <1 | <1 | <1 |
| +19.0mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| +37.5mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| +75.0mm | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| EA150: Soil Classification based on Particle Size | | | | | | | | | |
| Clay (<2 µm) | ---- | 1 | % | | 5 | 12 | 9 | 6 | 7 |
| Silt (2-60 µm) | ---- | 1 | % | | 1 | 1 | 3 | 3 | 3 |
| Sand (0.06-2.00 mm) | ---- | 1 | % | | 86 | 77 | 82 | 88 | 85 |
| Gravel (>2mm) | ---- | 1 | % | | 8 | 10 | 6 | 3 | 5 |
| Cobbles (>6cm) | ---- | 1 | % | | <1 | <1 | <1 | <1 | <1 |
| EA152: Soil Particle Density | | | | | | | | | |
| Soil Particle Density (Clay/Silt/Sand) | ---- | 0.01 | g/cm3 | | 2.67 | 2.67 | 2.66 | 2.66 | 2.67 |
| EG005(ED093)-SD: Total Metals in Sediments by ICP-AES | | | | | | | | | |
| Iron | 7439-89-6 | 50 | mg/kg | | 8340 | 7710 | 7860 | 11400 | 7980 |
| EG020-SD: Total Metals in Sediments by ICPMS | | | | | | | | | |
| Antimony | 7440-36-0 | 0.50 | mg/kg | | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| Arsenic | 7440-38-2 | 1.00 | mg/kg | | 14.1 | 13.1 | 11.5 | 16.5 | 12.4 |
| Cadmium | 7440-43-9 | 0.1 | mg/kg | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chromium | 7440-47-3 | 1.0 | mg/kg | | 7.1 | 6.0 | 6.8 | 9.5 | 8.0 |
| Copper | 7440-50-8 | 1.0 | mg/kg | | 1.9 | 1.0 | <1.0 | 2.1 | 3.4 |
| Cobalt | 7440-48-4 | 0.5 | mg/kg | | 1.4 | 1.7 | 1.4 | 1.9 | 1.7 |
| Lead | 7439-92-1 | 1.0 | mg/kg | | 2.4 | 2.0 | 2.2 | 3.5 | 2.7 |
| Manganese | 7439-96-5 | 10 | mg/kg | | 29 | 29 | 22 | 42 | 37 |
| Nickel | 7440-02-0 | 1.0 | mg/kg | | 2.5 | 2.6 | 2.5 | 3.7 | 3.5 |



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| Sub-Matrix: SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2h_ii | CPB2i | CPB2j | CPB2k_j | CPB2f_ii |
|---|-------------------|------|---------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | ES1922917-006 | ES1922917-008 | ES1922917-009 | ES1922917-010 | ES1922917-011 |
| | | | | | Result | Result | Result | Result | Result |
| EG020-SD: Total Metals in Sediments by ICPMS - Continued | | | | | | | | | |
| Selenium | 7782-49-2 | 0.1 | mg/kg | | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 |
| Silver | 7440-22-4 | 0.1 | mg/kg | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Vanadium | 7440-62-2 | 2.0 | mg/kg | | 28.6 | 24.4 | 27.5 | 38.9 | 24.3 |
| Zinc | 7440-66-6 | 1.0 | mg/kg | | 7.6 | 4.8 | 7.3 | 11.8 | 12.6 |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) | | | | | | | | | |
| Mercury | 7439-97-6 | 0.01 | mg/kg | | 0.02 | 0.01 | <0.01 | 0.02 | 0.01 |
| EP003: Total Organic Carbon (TOC) in Soil | | | | | | | | | |
| Total Organic Carbon | ---- | 0.02 | % | | 0.17 | 0.20 | 0.25 | 0.37 | 0.37 |
| EP090: Organotin Compounds | | | | | | | | | |
| Monobutyltin | 78763-54-9 | 1 | µgSn/kg | | <1 | <1 | <1 | <1 | <1 |
| Dibutyltin | 1002-53-5 | 1 | µgSn/kg | | <1 | <1 | <1 | <1 | <1 |
| Tributyltin | 56573-85-4 | 0.5 | µgSn/kg | | <0.5 | <0.6 | <0.5 | <3.2 | <0.5 |
| EP132B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 5 | µg/kg | | <5 | <5 | <5 | <5 | <5 |
| 2-Methylnaphthalene | 91-57-6 | 5 | µg/kg | | <5 | <5 | <5 | <5 | <5 |
| Acenaphthylene | 208-96-8 | 4 | µg/kg | | <4 | <4 | <4 | <4 | <4 |
| Acenaphthene | 83-32-9 | 4 | µg/kg | | 4 | <4 | 4 | 7 | 4 |
| Fluorene | 86-73-7 | 4 | µg/kg | | <4 | <4 | <4 | <4 | <4 |
| Phenanthrene | 85-01-8 | 4 | µg/kg | | <4 | <4 | <4 | 7 | <4 |
| Anthracene | 120-12-7 | 4 | µg/kg | | <4 | <4 | <4 | <4 | <4 |
| Fluoranthene | 206-44-0 | 4 | µg/kg | | <4 | <4 | <4 | 15 | <4 |
| Pyrene | 129-00-0 | 4 | µg/kg | | 5 | 5 | 5 | 18 | 6 |
| Benz(a)anthracene | 56-55-3 | 4 | µg/kg | | <4 | <4 | <4 | 11 | <4 |
| Chrysene | 218-01-9 | 4 | µg/kg | | <4 | <4 | <4 | 8 | <4 |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 4 | µg/kg | | <4 | <4 | <4 | 13 | <4 |
| Benzo(k)fluoranthene | 207-08-9 | 4 | µg/kg | | <4 | <4 | <4 | 8 | <4 |
| Benzo(e)pyrene | 192-97-2 | 4 | µg/kg | | <4 | <4 | <4 | 7 | <4 |
| Benzo(a)pyrene | 50-32-8 | 4 | µg/kg | | <4 | <4 | <4 | 12 | <4 |
| Perylene | 198-55-0 | 4 | µg/kg | | <4 | <4 | <4 | <4 | <4 |
| Benzo(g,h,i)perylene | 191-24-2 | 4 | µg/kg | | <4 | <4 | <4 | 7 | <4 |
| Dibenz(a,h)anthracene | 53-70-3 | 4 | µg/kg | | <4 | <4 | <4 | <4 | <4 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 4 | µg/kg | | <4 | <4 | <4 | 5 | <4 |
| Coronene | 191-07-1 | 5 | µg/kg | | <5 | <5 | <5 | <5 | <5 |
| ^ Sum of PAHs | ---- | 4 | µg/kg | | 9 | 5 | 9 | 118 | 10 |



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| Sub-Matrix: SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2h_ii | CPB2i | CPB2j | CPB2k_j | CPB2f_ii |
|--|------------|--------|-------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Client sampling date / time | | | | | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | ES1922917-006 | ES1922917-008 | ES1922917-009 | ES1922917-010 | ES1922917-011 |
| | | | | | Result | Result | Result | Result | Result |
| EP132B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 4 | µg/kg | | <4 | <4 | <4 | 16 | <4 |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 4 | µg/kg | | 5 | 5 | 5 | 18 | 5 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 4 | µg/kg | | 10 | 10 | 10 | 20 | 10 |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | 0.0004 | <0.0002 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |

| | | | |
|--|-----------|--------|-------|
| N-Ethyl perfluorooctane
sulfonamidoacetic acid
(EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg |
|--|-----------|--------|-------|

| | | | |
|--|-------------|--------|-------|
| 10:2 Fluorotelomer sulfonic acid
(10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg |
|--|-------------|--------|-------|

| | | | |
|---------------------------|------|--------|-------|
| Sum of PFAS (WA DER List) | ---- | 0.0002 | mg/kg |
|---------------------------|------|--------|-------|

| | | | |
|-------------|------|-----|---|
| Tripopyltin | ---- | 0.5 | % |
|-------------|------|-----|---|

| | | | |
|-----------------|-----------|----|---|
| 4-Terphenyl-d14 | 1718-51-0 | 10 | % |
|-----------------|-----------|----|---|

EP231S: PFAS Surrogate

Result

 ≤ 0.0002 ≤ 0.0002 ≤ 0.0002 <0.0002 ≤ 0.0002



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| | | | | | | | | | |
|--|------------|--------|------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Sub-Matrix: SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2h_ii | CPB2i | CPB2j | CPB2k_j | CPB2f_ii |
| Client sampling date / time | | | | | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 |
| Compound | CAS Number | LOR | Unit | | ES1922917-006 | ES1922917-008 | ES1922917-009 | ES1922917-010 | ES1922917-011 |
| | | | | | Result | Result | Result | Result | Result |
| EP231S: PFAS Surrogate - Continued | | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | | 66.0 | 85.5 | 81.5 | 102 | 99.5 |
| 13C8-PFOA | ---- | 0.0002 | % | | 69.0 | 85.0 | 79.0 | 105 | 98.5 |



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|--|------------|------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2f_iii | CPB2I | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | ES1922917-012 | ES1922917-013 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | | |
| Moisture Content | ---- | 0.1 | % | | 40.5 | 36.5 | ---- | ---- | ---- |
| EA150: Particle Sizing | | | | | | | | | |
| +75µm | ---- | 1 | % | | 90 | 84 | ---- | ---- | ---- |
| +150µm | ---- | 1 | % | | 57 | 64 | ---- | ---- | ---- |
| +300µm | ---- | 1 | % | | 34 | 41 | ---- | ---- | ---- |
| +425µm | ---- | 1 | % | | 23 | 33 | ---- | ---- | ---- |
| +600µm | ---- | 1 | % | | 15 | 24 | ---- | ---- | ---- |
| +1180µm | ---- | 1 | % | | 9 | 14 | ---- | ---- | ---- |
| +2.36mm | ---- | 1 | % | | 6 | 10 | ---- | ---- | ---- |
| +4.75mm | ---- | 1 | % | | 2 | 6 | ---- | ---- | ---- |
| +9.5mm | ---- | 1 | % | | <1 | 4 | ---- | ---- | ---- |
| +19.0mm | ---- | 1 | % | | <1 | <1 | ---- | ---- | ---- |
| +37.5mm | ---- | 1 | % | | <1 | <1 | ---- | ---- | ---- |
| +75.0mm | ---- | 1 | % | | <1 | <1 | ---- | ---- | ---- |
| EA150: Soil Classification based on Particle Size | | | | | | | | | |
| Clay (<2 µm) | ---- | 1 | % | | 8 | 13 | ---- | ---- | ---- |
| Silt (2-60 µm) | ---- | 1 | % | | 1 | 2 | ---- | ---- | ---- |
| Sand (0.06-2.00 mm) | ---- | 1 | % | | 84 | 73 | ---- | ---- | ---- |
| Gravel (>2mm) | ---- | 1 | % | | 7 | 12 | ---- | ---- | ---- |
| Cobbles (>6cm) | ---- | 1 | % | | <1 | <1 | ---- | ---- | ---- |
| EA152: Soil Particle Density | | | | | | | | | |
| Soil Particle Density (Clay/Silt/Sand) | ---- | 0.01 | g/cm3 | | 2.59 | 2.68 | ---- | ---- | ---- |
| EG005(ED093)-SD: Total Metals in Sediments by ICP-AES | | | | | | | | | |
| Iron | 7439-89-6 | 50 | mg/kg | | 9140 | 8880 | ---- | ---- | ---- |
| EG020-SD: Total Metals in Sediments by ICPMS | | | | | | | | | |
| Antimony | 7440-36-0 | 0.50 | mg/kg | | <0.50 | <0.50 | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | 1.00 | mg/kg | | 15.4 | 12.2 | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | ---- | ---- |
| Chromium | 7440-47-3 | 1.0 | mg/kg | | 8.9 | 10.2 | ---- | ---- | ---- |
| Copper | 7440-50-8 | 1.0 | mg/kg | | 2.6 | 2.4 | ---- | ---- | ---- |
| Cobalt | 7440-48-4 | 0.5 | mg/kg | | 2.0 | 2.1 | ---- | ---- | ---- |
| Lead | 7439-92-1 | 1.0 | mg/kg | | 3.1 | 3.4 | ---- | ---- | ---- |
| Manganese | 7439-96-5 | 10 | mg/kg | | 40 | 28 | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 1.0 | mg/kg | | 4.2 | 4.2 | ---- | ---- | ---- |



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|---|-------------------|------|---------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2f_iii | CPB2I | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | ES1922917-012 | ES1922917-013 | ----- | ----- | ----- |
| | | | | Result | Result | | ---- | ---- | ---- |
| EG020-SD: Total Metals in Sediments by ICPMS - Continued | | | | | | | | | |
| Selenium | 7782-49-2 | 0.1 | mg/kg | | 0.2 | 0.2 | ---- | ---- | ---- |
| Silver | 7440-22-4 | 0.1 | mg/kg | | <0.1 | <0.1 | ---- | ---- | ---- |
| Vanadium | 7440-62-2 | 2.0 | mg/kg | | 29.2 | 34.3 | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 1.0 | mg/kg | | 9.8 | 9.0 | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) | | | | | | | | | |
| Mercury | 7439-97-6 | 0.01 | mg/kg | | 0.02 | 0.02 | ---- | ---- | ---- |
| EP003: Total Organic Carbon (TOC) in Soil | | | | | | | | | |
| Total Organic Carbon | ---- | 0.02 | % | | 0.39 | 0.28 | ---- | ---- | ---- |
| EP090: Organotin Compounds | | | | | | | | | |
| Monobutyltin | 78763-54-9 | 1 | µgSn/kg | | <1 | <1 | ---- | ---- | ---- |
| Dibutyltin | 1002-53-5 | 1 | µgSn/kg | | <1 | <1 | ---- | ---- | ---- |
| Tributyltin | 56573-85-4 | 0.5 | µgSn/kg | | <0.5 | <0.5 | ---- | ---- | ---- |
| EP132B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | |
| Naphthalene | 91-20-3 | 5 | µg/kg | | <5 | <5 | ---- | ---- | ---- |
| 2-Methylnaphthalene | 91-57-6 | 5 | µg/kg | | <5 | <5 | ---- | ---- | ---- |
| Acenaphthylene | 208-96-8 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Acenaphthene | 83-32-9 | 4 | µg/kg | | 5 | 5 | ---- | ---- | ---- |
| Fluorene | 86-73-7 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Phenanthrene | 85-01-8 | 4 | µg/kg | | <4 | 8 | ---- | ---- | ---- |
| Anthracene | 120-12-7 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Fluoranthene | 206-44-0 | 4 | µg/kg | | <4 | 10 | ---- | ---- | ---- |
| Pyrene | 129-00-0 | 4 | µg/kg | | 7 | 12 | ---- | ---- | ---- |
| Benz(a)anthracene | 56-55-3 | 4 | µg/kg | | <4 | 7 | ---- | ---- | ---- |
| Chrysene | 218-01-9 | 4 | µg/kg | | <4 | 6 | ---- | ---- | ---- |
| Benzo(b+j)fluoranthene | 205-99-2 205-82-3 | 4 | µg/kg | | <4 | 8 | ---- | ---- | ---- |
| Benzo(k)fluoranthene | 207-08-9 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Benzo(e)pyrene | 192-97-2 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Benzo(a)pyrene | 50-32-8 | 4 | µg/kg | | <4 | 7 | ---- | ---- | ---- |
| Perylene | 198-55-0 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | 4 | µg/kg | | <4 | 8 | ---- | ---- | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | 4 | µg/kg | | <4 | <4 | ---- | ---- | ---- |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 4 | µg/kg | | <4 | 4 | ---- | ---- | ---- |
| Coronene | 191-07-1 | 5 | µg/kg | | <5 | <5 | ---- | ---- | ---- |
| ^ Sum of PAHs | ---- | 4 | µg/kg | | 12 | 75 | ---- | ---- | ---- |



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| Sub-Matrix: SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2f_iii | CPB2I | ---- | ---- | ---- |
|--|------------|--------|-------|------------------|-------------------|-------------------|-------|-------|-------|
| Client sampling date / time | | | | | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | ES1922917-012 | ES1922917-013 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP132B: Polynuclear Aromatic Hydrocarbons - Continued | | | | | | | | | |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 4 | µg/kg | | <4 | 9 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 4 | µg/kg | | 5 | 11 | ---- | ---- | ---- |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 4 | µg/kg | | 10 | 13 | ---- | ---- | ---- |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | | |
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | | |
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | | <0.001 | <0.001 | ---- | ---- | ---- |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | | <0.0005 | <0.0005 | ---- | ---- | ---- |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | | <0.0002 | <0.0002 | ---- | ---- | ---- |

EP231S: PFAS Surrogate



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|---|------------|--------|------|------------------|-------------------|-------------------|-------|-------|-------|
| Sub-Matrix: SEDIMENT
(Matrix: SOIL) | | | | Client sample ID | CPB2f_iii | CPB2I | ---- | ---- | ---- |
| Client sampling date / time | | | | | 18-Jul-2019 00:00 | 18-Jul-2019 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | ES1922917-012 | ES1922917-013 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| EP231S: PFAS Surrogate - Continued | | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | | 91.0 | 96.0 | ---- | ---- | ---- |
| 13C8-PFOA | ---- | 0.0002 | % | | 87.0 | 89.0 | ---- | ---- | ---- |

Sub-Matrix: **SEDIMENT**

| Sub-Matrix: SEDIMENT | | | |
|--|-------------------|----|-----|
| <i>Compound</i> | <i>CAS Number</i> | % | |
| EP090S: Organotin Surrogate | | | |
| Tripopyltin | ---- | 35 | 130 |
| EP132T: Base/Neutral Extractable Surrogates | | | |
| 2-Fluorobiphenyl | 321-60-8 | 55 | 135 |
| Anthracene-d10 | 1719-06-8 | 70 | 136 |
| 4-Terphenyl-d14 | 1718-51-0 | 57 | 127 |
| EP231S: PFAS Surrogate | | | |
| 13C4-PFOS | ---- | 60 | 120 |
| 13C8-PFOA | ---- | 60 | 120 |

QUALITY CONTROL REPORT

| | | | |
|-------------------------|--|-------------------------|---|
| Work Order | : ES1922917 | Page | : 1 of 11 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Sydney |
| Contact | : [REDACTED] | Contact | : [REDACTED] |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 277-289 Woodpark Road Smithfield NSW Australia 2164 |
| Telephone | : ---- | Telephone | : +61 2 8784 8555 |
| Project | : 60592617 | Date Samples Received | : 20-Jul-2019 |
| Order number | : 60592617 | Date Analysis Commenced | : 25-Jul-2019 |
| C-O-C number | : ---- | Issue Date | : 01-Aug-2019 |
| Sampler | : ---- | | |
| Site | : CRIB POINT | | |
| Quote number | : EN/004/16 | | |
| No. of samples received | : 12 | | |
| No. of samples analysed | : 12 | | |



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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[REDACTED]
[REDACTED]
[REDACTED]

Senior Acid Sulfate Soil Chemist
Senior Spectroscopist
Organic Coordinator
Inorganic Chemist
LCMS Coordinator
Senior Inorganic Chemist
Organic Chemist

Brisbane Acid Sulphate Soils, Stafford, QLD
Sydney Inorganics, Smithfield, NSW
Sydney Organics, Smithfield, NSW
Sydney Inorganics, Smithfield, NSW
Sydney Organics, Smithfield, NSW
Brisbane Acid Sulphate Soils, Stafford, QLD
Brisbane Organics, Stafford, QLD



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|-------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QC Lot: 2491404) | | | | | | | | | |
| ES1922917-001 | CPB2e | EG005-SD: Iron | 7439-89-6 | 50 | mg/kg | 7460 | 6790 | 9.48 | 0% - 20% |
| ES1922917-012 | CPB2f_iii | EG005-SD: Iron | 7439-89-6 | 50 | mg/kg | 9140 | 9220 | 0.792 | 0% - 20% |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) (QC Lot: 2491405) | | | | | | | | | |
| ES1922917-001 | CPB2e | EG035T-LL: Mercury | 7439-97-6 | 0.01 | mg/kg | 0.02 | 0.01 | 0.00 | No Limit |
| ES1922917-012 | CPB2f_iii | EG035T-LL: Mercury | 7439-97-6 | 0.01 | mg/kg | 0.02 | 0.02 | 0.00 | No Limit |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2489437) | | | | | | | | | |
| ES1922917-001 | CPB2e | EA055: Moisture Content | ---- | 0.1 | % | 28.5 | 25.4 | 11.2 | 0% - 20% |
| ES1922917-011 | CPB2f_ii | EA055: Moisture Content | ---- | 0.1 | % | 36.0 | 36.0 | 0.00 | 0% - 20% |
| EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 2491403) | | | | | | | | | |
| ES1922917-001 | CPB2e | EG020-SD: Cadmium | 7440-43-9 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| | | EG020-SD: Selenium | 7782-49-2 | 0.1 | mg/kg | 0.2 | 0.2 | 0.00 | No Limit |
| | | EG020-SD: Silver | 7440-22-4 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| | | EG020-SD: Antimony | 7440-36-0 | 0.5 | mg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EG020-SD: Cobalt | 7440-48-4 | 0.5 | mg/kg | 1.5 | 1.4 | 0.00 | No Limit |
| | | EG020-SD: Arsenic | 7440-38-2 | 1 | mg/kg | 10.2 | 10.2 | 0.394 | 0% - 50% |
| | | EG020-SD: Chromium | 7440-47-3 | 1 | mg/kg | 6.9 | 6.3 | 9.12 | No Limit |
| | | EG020-SD: Copper | 7440-50-8 | 1 | mg/kg | <1.0 | 1.1 | 10.1 | No Limit |
| | | EG020-SD: Lead | 7439-92-1 | 1 | mg/kg | 2.8 | 2.2 | 22.5 | No Limit |
| | | EG020-SD: Nickel | 7440-02-0 | 1 | mg/kg | 2.2 | 2.7 | 22.4 | No Limit |
| | | EG020-SD: Zinc | 7440-66-6 | 1 | mg/kg | 8.2 | 6.2 | 28.8 | No Limit |
| | | EG020-SD: Manganese | 7439-96-5 | 10 | mg/kg | 30 | 26 | 13.6 | No Limit |
| | | EG020-SD: Vanadium | 7440-62-2 | 2 | mg/kg | 30.5 | 23.4 | 26.1 | 0% - 50% |
| | | EG020-SD: Cadmium | 7440-43-9 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| ES1922917-012 | CPB2f_iii | EG020-SD: Selenium | 7782-49-2 | 0.1 | mg/kg | 0.2 | 0.2 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|-----------------------------------|------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020-SD: Total Metals in Sediments by ICPMS (QC Lot: 2491403) - continued | | | | | | | | | |
| ES1922917-012 | CPB2f_iii | EG020-SD: Silver | 7440-22-4 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| | | EG020-SD: Antimony | 7440-36-0 | 0.5 | mg/kg | <0.50 | <0.50 | 0.00 | No Limit |
| | | EG020-SD: Cobalt | 7440-48-4 | 0.5 | mg/kg | 2.0 | 2.0 | 0.00 | No Limit |
| | | EG020-SD: Arsenic | 7440-38-2 | 1 | mg/kg | 15.4 | 15.1 | 1.88 | 0% - 50% |
| | | EG020-SD: Chromium | 7440-47-3 | 1 | mg/kg | 8.9 | 9.1 | 2.60 | No Limit |
| | | EG020-SD: Copper | 7440-50-8 | 1 | mg/kg | 2.6 | 2.3 | 12.5 | No Limit |
| | | EG020-SD: Lead | 7439-92-1 | 1 | mg/kg | 3.1 | 3.0 | 0.00 | No Limit |
| | | EG020-SD: Nickel | 7440-02-0 | 1 | mg/kg | 4.2 | 4.0 | 5.20 | No Limit |
| | | EG020-SD: Zinc | 7440-66-6 | 1 | mg/kg | 9.8 | 10.9 | 11.4 | 0% - 50% |
| | | EG020-SD: Manganese | 7439-96-5 | 10 | mg/kg | 40 | 40 | 0.00 | No Limit |
| | | EG020-SD: Vanadium | 7440-62-2 | 2 | mg/kg | 29.2 | 30.6 | 4.80 | 0% - 50% |
| EP003: Total Organic Carbon (TOC) in Soil (QC Lot: 2497949) | | | | | | | | | |
| EB1919207-001 | Anonymous | EP003: Total Organic Carbon | ---- | 0.02 | % | 2.59 | 2.59 | 0.00 | 0% - 20% |
| ES1922917-009 | CPB2j | EP003: Total Organic Carbon | ---- | 0.02 | % | 0.25 | 0.26 | 5.06 | 0% - 50% |
| EP090: Organotin Compounds (QC Lot: 2482729) | | | | | | | | | |
| ES1922917-001 | CPB2e | EP090: Tributyltin | 56573-85-4 | 0.5 | µgSn/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP090: Monobutyltin | 78763-54-9 | 1 | µgSn/kg | <1 | <1 | 0.00 | No Limit |
| | | EP090: Dibutyltin | 1002-53-5 | 1 | µgSn/kg | <1 | <1 | 0.00 | No Limit |
| ES1922917-012 | CPB2f_iii | EP090: Tributyltin | 56573-85-4 | 0.5 | µgSn/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP090: Monobutyltin | 78763-54-9 | 1 | µgSn/kg | <1 | <1 | 0.00 | No Limit |
| | | EP090: Dibutyltin | 1002-53-5 | 1 | µgSn/kg | <1 | <1 | 0.00 | No Limit |
| EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2480149) | | | | | | | | | |
| ES1922917-001 | CPB2e | EP132B-SD: Acenaphthylene | 208-96-8 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Acenaphthene | 83-32-9 | 4 | µg/kg | 4 | 4 | 0.00 | No Limit |
| | | EP132B-SD: Fluorene | 86-73-7 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Phenanthrene | 85-01-8 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Anthracene | 120-12-7 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Fluoranthene | 206-44-0 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Pyrene | 129-00-0 | 4 | µg/kg | 5 | 5 | 0.00 | No Limit |
| | | EP132B-SD: Benz(a)anthracene | 56-55-3 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Chrysene | 218-01-9 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Benzo(b+j)fluoranthene | 205-99-2 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | | 205-82-3 | | | | | | |
| | | EP132B-SD: Benzo(k)fluoranthene | 207-08-9 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Benzo(e)pyrene | 192-97-2 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Benzo(a)pyrene | 50-32-8 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Perylene | 198-55-0 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Benzo(g,h,i)perylene | 191-24-2 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Dibenz(a,h)anthracene | 53-70-3 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |
| | | EP132B-SD: Indeno(1.2.3.cd)pyrene | 193-39-5 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit |

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | | | |
|---|------------------|---|------------|--|----------|-----------------|------------------|---------|---------------------|------|----------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) | | |
| EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2480149) - continued | | | | | | | | | | | |
| ES1922917-001 | CPB2e | EP132B-SD: Sum of PAHs | ---- | 4 | µg/kg | 9 | 9 | 0.00 | No Limit | | |
| | | EP132B-SD: Naphthalene | 91-20-3 | 5 | µg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EP132B-SD: 2-Methylnaphthalene | 91-57-6 | 5 | µg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EP132B-SD: Coronene | 191-07-1 | 5 | µg/kg | <5 | <5 | 0.00 | No Limit | | |
| ES1922917-012 | CPB2f_iii | EP132B-SD: Acenaphthylene | 208-96-8 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Acenaphthene | 83-32-9 | 4 | µg/kg | 5 | 5 | 0.00 | No Limit | | |
| | | EP132B-SD: Fluorene | 86-73-7 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Phenanthrene | 85-01-8 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Anthracene | 120-12-7 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Fluoranthene | 206-44-0 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Pyrene | 129-00-0 | 4 | µg/kg | 7 | 6 | 18.7 | No Limit | | |
| | | EP132B-SD: Benz(a)anthracene | 56-55-3 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Chrysene | 218-01-9 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Benzo(b+j)fluoranthene | 205-99-2 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | | 205-82-3 | | | | | | | | |
| | | EP132B-SD: Benzo(k)fluoranthene | 207-08-9 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Benzo(e)pyrene | 192-97-2 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Benzo(a)pyrene | 50-32-8 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Perylene | 198-55-0 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Benzo(g,h,i)perylene | 191-24-2 | 4 | µg/kg | <4 | 6 | 48.0 | No Limit | | |
| | | EP132B-SD: Dibenzo(a,h)anthracene | 53-70-3 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Indeno(1.2.3.cd)pyrene | 193-39-5 | 4 | µg/kg | <4 | <4 | 0.00 | No Limit | | |
| | | EP132B-SD: Sum of PAHs | ---- | 4 | µg/kg | 12 | 17 | 34.5 | No Limit | | |
| | | EP132B-SD: Naphthalene | 91-20-3 | 5 | µg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EP132B-SD: 2-Methylnaphthalene | 91-57-6 | 5 | µg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EP132B-SD: Coronene | 191-07-1 | 5 | µg/kg | <5 | <5 | 0.00 | No Limit | | |
| | | EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2495495) | | | | | | | | | |
| | | EM1911876-001 | Anonymous | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | | | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit | | |
| EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | | | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit | | |
| EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | | | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit | | |
| EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | | | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit | | |
| EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | | | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit | | |
| ES1922917-011 | CPB2f_ii | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit | | |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit | | |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit | | |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit | | |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit | | |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit | | |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2495495) | | | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2495495) - continued | | | | | | | | | |
| EM1911876-001 | Anonymous | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | 0.00 | No Limit |
| ES1922917-011 | CPB2f_ii | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | 0.00 | No Limit |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2495495) | | | | | | | | | |
| EM1911876-001 | Anonymous | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| ES1922917-011 | CPB2f_ii | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|-------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2495495) - continued | | | | | | | | | |
| ES1922917-011 | CPB2f_ii | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2495495) | | | | | | | | | |
| EM1911876-001 | Anonymous | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| ES1922917-011 | CPB2f_ii | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|---------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EG005(ED093)-SD: Total Metals in Sediments by ICP-AES (QCLot: 2491404) | | | | | | | | |
| EG005-SD: Iron | 7439-89-6 | 50 | mg/kg | <50 | 8400 mg/kg | 92.1 | 70 | 109 |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 2491405) | | | | | | | | |
| EG035T-LL: Mercury | 7439-97-6 | 0.01 | mg/kg | <0.01 | 0.257 mg/kg | 99.3 | 72 | 116 |
| EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 2491403) | | | | | | | | |
| EG020-SD: Antimony | 7440-36-0 | 0.5 | mg/kg | <0.50 | 4.6 mg/kg | 119 | 70 | 130 |
| EG020-SD: Arsenic | 7440-38-2 | 1 | mg/kg | <1.00 | 21.7 mg/kg | 96.1 | 80 | 139 |
| EG020-SD: Cadmium | 7440-43-9 | 0.1 | mg/kg | <0.1 | 4.64 mg/kg | 99.8 | 83 | 127 |
| EG020-SD: Chromium | 7440-47-3 | 1 | mg/kg | <1.0 | 43.9 mg/kg | 79.3 | 73 | 130 |
| EG020-SD: Copper | 7440-50-8 | 1 | mg/kg | <1.0 | 32 mg/kg | 93.8 | 76 | 130 |
| EG020-SD: Cobalt | 7440-48-4 | 0.5 | mg/kg | <0.5 | 16 mg/kg | 96.7 | 81 | 130 |
| EG020-SD: Lead | 7439-92-1 | 1 | mg/kg | <1.0 | 40 mg/kg | 92.0 | 74 | 130 |
| EG020-SD: Manganese | 7439-96-5 | 10 | mg/kg | <10 | 130 mg/kg | 92.7 | 76 | 130 |
| EG020-SD: Nickel | 7440-02-0 | 1 | mg/kg | <1.0 | 55 mg/kg | 94.0 | 83 | 130 |
| EG020-SD: Selenium | 7782-49-2 | 0.1 | mg/kg | <0.1 | 5.37 mg/kg | 93.0 | 71 | 130 |
| EG020-SD: Silver | 7440-22-4 | 0.1 | mg/kg | <0.1 | ---- | ---- | ---- | ---- |
| EG020-SD: Vanadium | 7440-62-2 | 2 | mg/kg | <2.0 | 29.6 mg/kg | 96.9 | 84 | 131 |
| EG020-SD: Zinc | 7440-66-6 | 1 | mg/kg | <1.0 | 60.8 mg/kg | 95.9 | 82 | 137 |
| EP003: Total Organic Carbon (TOC) in Soil (QCLot: 2497949) | | | | | | | | |
| EP003: Total Organic Carbon | ---- | 0.02 | % | <0.02 | 0.44 % | 96.4 | 70 | 130 |
| | | | | <0.02 | 0.48 % | 104 | 70 | 130 |
| EP090: Organotin Compounds (QCLot: 2482729) | | | | | | | | |
| EP090: Monobutyltin | 78763-54-9 | 1 | µgSn/kg | <1 | 1.25 µgSn/kg | 82.7 | 36 | 128 |
| EP090: Dibutyltin | 1002-53-5 | 1 | µgSn/kg | <1 | 1.25 µgSn/kg | 97.7 | 42 | 132 |
| EP090: Tributyltin | 56573-85-4 | 0.5 | µgSn/kg | <0.5 | 1.25 µgSn/kg | 124 | 52 | 139 |
| EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 2480149) | | | | | | | | |
| EP132B-SD: Naphthalene | 91-20-3 | 5 | µg/kg | <5 | 25 µg/kg | 97.5 | 63 | 129 |
| EP132B-SD: 2-Methylnaphthalene | 91-57-6 | 5 | µg/kg | <5 | 25 µg/kg | 76.4 | 64 | 128 |
| EP132B-SD: Acenaphthylene | 208-96-8 | 4 | µg/kg | <4 | 25 µg/kg | 95.3 | 65 | 129 |
| EP132B-SD: Acenaphthene | 83-32-9 | 4 | µg/kg | <4 | 25 µg/kg | 100.0 | 68 | 132 |
| EP132B-SD: Fluorene | 86-73-7 | 4 | µg/kg | <4 | 25 µg/kg | 102 | 68 | 124 |
| EP132B-SD: Phenanthrene | 85-01-8 | 4 | µg/kg | <4 | 25 µg/kg | 90.8 | 64 | 134 |
| EP132B-SD: Anthracene | 120-12-7 | 4 | µg/kg | <4 | 25 µg/kg | 94.9 | 65 | 131 |
| EP132B-SD: Fluoranthene | 206-44-0 | 4 | µg/kg | <4 | 25 µg/kg | 90.3 | 64 | 130 |
| EP132B-SD: Pyrene | 129-00-0 | 4 | µg/kg | <4 | 25 µg/kg | 93.8 | 67 | 133 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|--------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 2480149) - continued | | | | | | | | |
| EP132B-SD: Benz(a)anthracene | 56-55-3 | 4 | µg/kg | <4 | 25 µg/kg | 111 | 62 | 130 |
| EP132B-SD: Chrysene | 218-01-9 | 4 | µg/kg | <4 | 25 µg/kg | 90.9 | 65 | 133 |
| EP132B-SD: Benzo(b+j)fluoranthene | 205-99-2 | 4 | µg/kg | <4 | 25 µg/kg | 86.6 | 68 | 120 |
| | 205-82-3 | | | | | | | |
| EP132B-SD: Benzo(k)fluoranthene | 207-08-9 | 4 | µg/kg | <4 | 25 µg/kg | 109 | 61 | 133 |
| EP132B-SD: Benzo(e)pyrene | 192-97-2 | 4 | µg/kg | <4 | 25 µg/kg | 93.9 | 63 | 127 |
| EP132B-SD: Benzo(a)pyrene | 50-32-8 | 4 | µg/kg | <4 | 25 µg/kg | 98.5 | 66 | 118 |
| EP132B-SD: Perylene | 198-55-0 | 4 | µg/kg | <4 | 25 µg/kg | 72.8 | 69 | 119 |
| EP132B-SD: Benzo(g,h,i)perylene | 191-24-2 | 4 | µg/kg | <4 | 25 µg/kg | 118 | 66 | 120 |
| EP132B-SD: Dibenz(a,h)anthracene | 53-70-3 | 4 | µg/kg | <4 | 25 µg/kg | 119 | 64 | 122 |
| EP132B-SD: Indeno(1.2.3.cd)pyrene | 193-39-5 | 4 | µg/kg | <4 | 25 µg/kg | 115 | 64 | 120 |
| EP132B-SD: Coronene | 191-07-1 | 5 | µg/kg | <5 | 25 µg/kg | 109 | 68 | 136 |
| EP132B-SD: Sum of PAHs | ---- | 4 | µg/kg | <4 | ---- | ---- | ---- | ---- |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2495495) | | | | | | | | |
| EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 65.2 | 57 | 121 |
| EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 70.0 | 55 | 125 |
| EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 66.8 | 52 | 126 |
| EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 76.4 | 54 | 123 |
| EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 70.4 | 55 | 127 |
| EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 65.6 | 54 | 125 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2495495) | | | | | | | | |
| EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | 0.00625 mg/kg | 59.8 | 52 | 128 |
| EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 74.0 | 54 | 129 |
| EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 76.0 | 58 | 127 |
| EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 77.6 | 57 | 128 |
| EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 80.4 | 60 | 134 |
| EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 74.8 | 63 | 130 |
| EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 76.8 | 55 | 130 |
| EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 75.6 | 62 | 130 |
| EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 71.2 | 53 | 134 |
| EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 65.2 | 49 | 129 |
| EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 69.1 | 59 | 129 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2495495) | | | | | | | | |
| EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 76.0 | 52 | 132 |
| EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 72.3 | 65 | 126 |
| EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 68.4 | 64 | 126 |
| EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 67.9 | 63 | 124 |



| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-------------|--------|-------|-----------------------------|---------------------------------------|---------------------------|--------------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: <i>Compound</i> | CAS Number | LOR | Unit | Result | | | | |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2495495) - continued | | | | | | | | |
| EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 68.9 | 58 | 125 |
| EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 80.0 | 61 | 130 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 88.0 | 55 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2495495) | | | | | | | | |
| EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 68.0 | 54 | 130 |
| EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 70.8 | 61 | 130 |
| EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 64.0 | 62 | 130 |
| EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 73.6 | 60 | 130 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--------------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) (QCLot: 2491405) | | | | | | | |
| ES1922917-001 | CPB2e | EG035T-LL: Mercury | 7439-97-6 | 0.05 mg/kg | 102 | 70 | 130 |
| EG020-SD: Total Metals in Sediments by ICPMS (QCLot: 2491403) | | | | | | | |
| ES1922917-002 | CPB2d | EG020-SD: Arsenic | 7440-38-2 | 50 mg/kg | 87.7 | 70 | 130 |
| | | EG020-SD: Cadmium | 7440-43-9 | 50 mg/kg | 92.9 | 70 | 130 |
| | | EG020-SD: Chromium | 7440-47-3 | 50 mg/kg | 84.7 | 70 | 130 |
| | | EG020-SD: Copper | 7440-50-8 | 250 mg/kg | 84.8 | 70 | 130 |
| | | EG020-SD: Lead | 7439-92-1 | 250 mg/kg | 99.2 | 70 | 130 |
| | | EG020-SD: Nickel | 7440-02-0 | 50 mg/kg | 86.3 | 70 | 130 |
| | | EG020-SD: Zinc | 7440-66-6 | 250 mg/kg | 85.3 | 70 | 130 |
| EP090: Organotin Compounds (QCLot: 2482729) | | | | | | | |
| ES1922917-002 | CPB2d | EP090: Monobutyltin | 78763-54-9 | 1.25 µgSn/kg | # 15.7 | 20 | 130 |
| | | EP090: Dibutyltin | 1002-53-5 | 1.25 µgSn/kg | 44.3 | 20 | 130 |
| | | EP090: Tributyltin | 56573-85-4 | 1.25 µgSn/kg | 117 | 20 | 130 |
| EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 2480149) | | | | | | | |
| ES1922917-001 | CPB2e | EP132B-SD: Naphthalene | 91-20-3 | 25 µg/kg | 110 | 70 | 130 |
| | | EP132B-SD: 2-Methylnaphthalene | 91-57-6 | 25 µg/kg | 81.9 | 70 | 130 |
| | | EP132B-SD: Acenaphthylene | 208-96-8 | 25 µg/kg | 89.5 | 70 | 130 |
| | | EP132B-SD: Acenaphthene | 83-32-9 | 25 µg/kg | 80.2 | 70 | 130 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 2480149) - continued | | | | | | | |
| ES1922917-001 | CPB2e | EP132B-SD: Fluorene | 86-73-7 | 25 µg/kg | 112 | 70 | 130 |
| | | EP132B-SD: Phenanthrene | 85-01-8 | 25 µg/kg | 84.2 | 70 | 130 |
| | | EP132B-SD: Anthracene | 120-12-7 | 25 µg/kg | 90.0 | 70 | 130 |
| | | EP132B-SD: Fluoranthene | 206-44-0 | 25 µg/kg | 82.5 | 70 | 130 |
| | | EP132B-SD: Pyrene | 129-00-0 | 25 µg/kg | 75.0 | 70 | 130 |
| | | EP132B-SD: Benz(a)anthracene | 56-55-3 | 25 µg/kg | 102 | 70 | 130 |
| | | EP132B-SD: Chrysene | 218-01-9 | 25 µg/kg | 81.9 | 70 | 130 |
| | | EP132B-SD: Benzo(b+j)fluoranthene | 205-99-2 | 25 µg/kg | 80.8 | 70 | 130 |
| | | | 205-82-3 | | | | |
| | | EP132B-SD: Benzo(k)fluoranthene | 207-08-9 | 25 µg/kg | 97.6 | 70 | 130 |
| | | EP132B-SD: Benzo(e)pyrene | 192-97-2 | 25 µg/kg | 90.3 | 70 | 130 |
| | | EP132B-SD: Benzo(a)pyrene | 50-32-8 | 25 µg/kg | 102 | 70 | 130 |
| | | EP132B-SD: Perylene | 198-55-0 | 25 µg/kg | 101 | 70 | 130 |
| | | EP132B-SD: Benzo(g,h,i)perylene | 191-24-2 | 25 µg/kg | 97.0 | 70 | 130 |
| | | EP132B-SD: Dibenz(a,h)anthracene | 53-70-3 | 25 µg/kg | 104 | 70 | 130 |
| | | EP132B-SD: Indeno(1.2.3.cd)pyrene | 193-39-5 | 25 µg/kg | 101 | 70 | 130 |
| | | EP132B-SD: Coronene | 191-07-1 | 25 µg/kg | 116 | 70 | 130 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2495495) | | | | | | | |
| EM1911876-001 | Anonymous | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.00125 mg/kg | 68.8 | 50 | 130 |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.00125 mg/kg | 72.0 | 50 | 130 |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.00125 mg/kg | 70.4 | 50 | 130 |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.00125 mg/kg | 69.6 | 50 | 130 |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.00125 mg/kg | 72.0 | 50 | 130 |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.00125 mg/kg | 68.4 | 50 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2495495) | | | | | | | |
| EM1911876-001 | Anonymous | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.00625 mg/kg | 63.1 | 30 | 130 |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.00125 mg/kg | 77.6 | 50 | 130 |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.00125 mg/kg | 76.8 | 50 | 130 |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.00125 mg/kg | 80.0 | 50 | 130 |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.00125 mg/kg | 82.4 | 50 | 130 |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.00125 mg/kg | 77.2 | 50 | 130 |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.00125 mg/kg | 73.2 | 50 | 130 |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.00125 mg/kg | 75.6 | 50 | 130 |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.00125 mg/kg | 84.4 | 50 | 130 |
| | | EP231X: Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.00125 mg/kg | 71.2 | 30 | 130 |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.00312 mg/kg | 69.4 | 30 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2495495) | | | | | | | |
| EM1911876-001 | Anonymous | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.00125 mg/kg | 72.4 | 50 | 130 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|-------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2495495) - continued | | | | | | | |
| EM1911876-001 | Anonymous | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.00312 mg/kg | 49.5 | 30 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.00312 mg/kg | 51.6 | 30 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.00312 mg/kg | 58.8 | 30 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.00312 mg/kg | 67.0 | 30 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.00125 mg/kg | 79.2 | 30 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.00125 mg/kg | 70.4 | 30 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2495495) | | | | | | | |
| EM1911876-001 | Anonymous | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.00125 mg/kg | 66.4 | 50 | 130 |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.00125 mg/kg | 66.0 | 50 | 130 |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.00125 mg/kg | 64.8 | 50 | 130 |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.00125 mg/kg | 89.2 | 50 | 130 |

QA/QC Compliance Assessment to assist with Quality Review

| | | | |
|--------------|---------------------------|-------------------------|---------------------------------|
| Work Order | : ES1922917 | Page | : 1 of 8 |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Sydney |
| Contact | : [REDACTED] | Telephone | : +61 2 8784 8555 |
| Project | : 60592617 | Date Samples Received | : 20-Jul-2019 |
| Site | : CRIB POINT | Issue Date | : 01-Aug-2019 |
| Sampler | : ---- | No. of samples received | : 12 |
| Order number | : 60592617 | No. of samples analysed | : 12 |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|-------------------------------------|----------------------|------------------|--------------|------------|--------|---------|---|
| Matrix Spike (MS) Recoveries | | | | | | | |
| EP090: Organotin Compounds | ES1922917--002 | CPB2d | Monobutyltin | 78763-54-9 | 15.7 % | 20-130% | Recovery less than lower data quality objective |

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|--------------------------|--------------------|------------|---------------|------------------|-------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | |
| Soil Glass Jar - Unpreserved (EA055) | | | | | | | |
| CPB2e, CPB2f, CPB2h_i, CPB2i, CPB2k_j, CPB2f_iii, | CPB2d, CPB2g, CPB2h_ii, CPB2j, CPB2f_ii, CPB2l | 18-Jul-2019 | ---- | ---- | ---- | 25-Jul-2019 | 01-Aug-2019 |
| | | | | | | | ✓ |
| EA150: Particle Sizing | | | | | | | |
| Snap Lock Bag - ACM/Asbestos Grab Bag (EA150H) | | | | | | | |
| CPB2e, CPB2f, CPB2h_i, CPB2i, CPB2k_j, CPB2f_iii, | CPB2d, CPB2g, CPB2h_ii, CPB2j, CPB2f_ii, CPB2l | 18-Jul-2019 | ---- | ---- | ---- | 30-Jul-2019 | 14-Jan-2020 |
| | | | | | | | ✓ |
| EA150: Soil Classification based on Particle Size | | | | | | | |
| Snap Lock Bag - ACM/Asbestos Grab Bag (EA150H) | | | | | | | |
| CPB2e, CPB2f, CPB2h_i, CPB2i, CPB2k_j, CPB2f_iii, | CPB2d, CPB2g, CPB2h_ii, CPB2j, CPB2f_ii, CPB2l | 18-Jul-2019 | ---- | ---- | ---- | 30-Jul-2019 | 14-Jan-2020 |
| | | | | | | | ✓ |



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

| Method
Container / Client Sample ID(s) | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|--|
| | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA152: Soil Particle Density | | | | | | | | |
| Snap Lock Bag - ACM/Asbestos Grab Bag (EA152)
CPB2e,
CPB2f,
CPB2h_i,
CPB2i,
CPB2k_j,
CPB2f_iii,
CPB2d,
CPB2g,
CPB2h_ii,
CPB2j,
CPB2f_ii,
CPB2l | 18-Jul-2019 | ---- | ---- | ---- | 30-Jul-2019 | 14-Jan-2020 | ✓ | |
| EG005(ED093)-SD: Total Metals in Sediments by ICP-AES | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG005-SD)
CPB2e,
CPB2f,
CPB2h_i,
CPB2i,
CPB2k_j,
CPB2f_iii,
CPB2d,
CPB2g,
CPB2h_ii,
CPB2j,
CPB2f_ii,
CPB2l | 18-Jul-2019 | 26-Jul-2019 | 14-Jan-2020 | ✓ | 26-Jul-2019 | 14-Jan-2020 | ✓ | |
| EG020-SD: Total Metals in Sediments by ICPMS | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG020-SD)
CPB2e,
CPB2f,
CPB2h_i,
CPB2i,
CPB2k_j,
CPB2f_iii,
CPB2d,
CPB2g,
CPB2h_ii,
CPB2j,
CPB2f_ii,
CPB2l | 18-Jul-2019 | 26-Jul-2019 | 14-Jan-2020 | ✓ | 26-Jul-2019 | 14-Jan-2020 | ✓ | |
| EG035T: Total Recoverable Mercury by FIMS (Low Level) | | | | | | | | |
| Soil Glass Jar - Unpreserved (EG035T-LL)
CPB2e,
CPB2f,
CPB2h_i,
CPB2i,
CPB2k_j,
CPB2f_iii,
CPB2d,
CPB2g,
CPB2h_ii,
CPB2j,
CPB2f_ii,
CPB2l | 18-Jul-2019 | 26-Jul-2019 | 15-Aug-2019 | ✓ | 29-Jul-2019 | 15-Aug-2019 | ✓ | |
| EP003: Total Organic Carbon (TOC) in Soil | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP003)
CPB2e,
CPB2f,
CPB2h_i,
CPB2i,
CPB2k_j,
CPB2f_iii,
CPB2d,
CPB2g,
CPB2h_ii,
CPB2j,
CPB2f_ii,
CPB2l | 18-Jul-2019 | 31-Jul-2019 | 15-Aug-2019 | ✓ | 31-Jul-2019 | 15-Aug-2019 | ✓ | |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|-----------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP090: Organotin Compounds | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP090) | | 18-Jul-2019 | 26-Jul-2019 | 01-Aug-2019 | ✓ | 29-Jul-2019 | 04-Sep-2019 | ✓ |
| CPB2e, | CPB2d, | | | | | | | |
| CPB2f, | CPB2g, | | | | | | | |
| CPB2h_i, | CPB2h_ii, | | | | | | | |
| CPB2i, | CPB2j, | | | | | | | |
| CPB2k_j, | CPB2f_ii, | | | | | | | |
| CPB2f_iii, | CPB2l | | | | | | | |
| EP132B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| Soil Glass Jar - Unpreserved (EP132B-SD) | | 18-Jul-2019 | 25-Jul-2019 | 01-Aug-2019 | ✓ | 26-Jul-2019 | 03-Sep-2019 | ✓ |
| CPB2e, | CPB2d, | | | | | | | |
| CPB2f, | CPB2g, | | | | | | | |
| CPB2h_i, | CPB2h_ii, | | | | | | | |
| CPB2i, | CPB2j, | | | | | | | |
| CPB2k_j, | CPB2f_ii, | | | | | | | |
| CPB2f_iii, | CPB2l | | | | | | | |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| HDPE Soil Jar (EP231X) | | 18-Jul-2019 | 30-Jul-2019 | 14-Jan-2020 | ✓ | 30-Jul-2019 | 08-Sep-2019 | ✓ |
| CPB2e, | CPB2d, | | | | | | | |
| CPB2f, | CPB2g, | | | | | | | |
| CPB2h_i, | CPB2h_ii, | | | | | | | |
| CPB2i, | CPB2j, | | | | | | | |
| CPB2k_j, | CPB2f_ii, | | | | | | | |
| CPB2f_iii, | CPB2l | | | | | | | |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| HDPE Soil Jar (EP231X) | | 18-Jul-2019 | 30-Jul-2019 | 14-Jan-2020 | ✓ | 30-Jul-2019 | 08-Sep-2019 | ✓ |
| CPB2e, | CPB2d, | | | | | | | |
| CPB2f, | CPB2g, | | | | | | | |
| CPB2h_i, | CPB2h_ii, | | | | | | | |
| CPB2i, | CPB2j, | | | | | | | |
| CPB2k_j, | CPB2f_ii, | | | | | | | |
| CPB2f_iii, | CPB2l | | | | | | | |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| HDPE Soil Jar (EP231X) | | 18-Jul-2019 | 30-Jul-2019 | 14-Jan-2020 | ✓ | 30-Jul-2019 | 08-Sep-2019 | ✓ |
| CPB2e, | CPB2d, | | | | | | | |
| CPB2f, | CPB2g, | | | | | | | |
| CPB2h_i, | CPB2h_ii, | | | | | | | |
| CPB2i, | CPB2j, | | | | | | | |
| CPB2k_j, | CPB2f_ii, | | | | | | | |
| CPB2f_iii, | CPB2l | | | | | | | |

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|-----------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | |
| HDPE Soil Jar (EP231X) | | 18-Jul-2019 | 30-Jul-2019 | 14-Jan-2020 | ✓ | 30-Jul-2019 | 08-Sep-2019 | ✓ |
| CPB2e, | CPB2d, | | | | | | | |
| CPB2f, | CPB2g, | | | | | | | |
| CPB2h_i, | CPB2h_ii, | | | | | | | |
| CPB2i, | CPB2j, | | | | | | | |
| CPB2k_j, | CPB2f_ii, | | | | | | | |
| CPB2f_iii, | CPB2l | | | | | | | |
| EP231P: PFAS Sums | | | | | | | | |
| HDPE Soil Jar (EP231X) | | 18-Jul-2019 | 30-Jul-2019 | 14-Jan-2020 | ✓ | 30-Jul-2019 | 08-Sep-2019 | ✓ |
| CPB2e, | CPB2d, | | | | | | | |
| CPB2f, | CPB2g, | | | | | | | |
| CPB2h_i, | CPB2h_ii, | | | | | | | |
| CPB2i, | CPB2j, | | | | | | | |
| CPB2k_j, | CPB2f_ii, | | | | | | | |
| CPB2f_iii, | CPB2l | | | | | | | |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|-----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Moisture Content | EA055 | 2 | 17 | 11.76 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Organotin Analysis | EP090 | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAHs in Sediments by GCMS(SIM) | EP132B-SD | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 2 | 13 | 15.38 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fe and Al in Sediments by ICPAES | EG005-SD | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS (Low Level) | EG035T-LL | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals in Sediments by ICPMS | EG020-SD | 2 | 12 | 16.67 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Organic Carbon | EP003 | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Organotin Analysis | EP090 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAHs in Sediments by GCMS(SIM) | EP132B-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fe and Al in Sediments by ICPAES | EG005-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS (Low Level) | EG035T-LL | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals in Sediments by ICPMS | EG020-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Organic Carbon | EP003 | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Organotin Analysis | EP090 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAHs in Sediments by GCMS(SIM) | EP132B-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fe and Al in Sediments by ICPAES | EG005-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS (Low Level) | EG035T-LL | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals in Sediments by ICPMS | EG020-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Organic Carbon | EP003 | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Organotin Analysis | EP090 | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PAHs in Sediments by GCMS(SIM) | EP132B-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 13 | 7.69 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS (Low Level) | EG035T-LL | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals in Sediments by ICPMS | EG020-SD | 1 | 12 | 8.33 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|---|
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time). |
| Particle Size Analysis by Hydrometer | EA150H | SOIL | Particle Size Analysis by Hydrometer according to AS1289.3.6.3 - 2003 |
| Soil Particle Density | EA152 | SOIL | Soil Particle Density by AS 1289.3.5.1-2006 : Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method |
| Total Fe and Al in Sediments by ICPAES | EG005-SD | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3). LORs per NODG |
| Total Metals in Sediments by ICPMS | EG020-SD | SOIL | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. Analyte list and LORs per NODG. |
| Total Mercury by FIMS (Low Level) | EG035T-LL | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Organic Carbon | EP003 | SOIL | In house C-IR17. Dried and pulverised sample is reacted with acid to remove inorganic Carbonates, then combusted in a LECO furnace in the presence of strong oxidants / catalysts. The evolved (Organic) Carbon (as CO ₂) is automatically measured by infra-red detector. |
| Organotin Analysis | EP090 | SOIL | In house: Referenced to USEPA SW 846 - 8270D Prepared sample extracts are analysed by GC/MS coupled with high volume injection, and quantified against an established calibration curve. |
| PAHs in Sediments by GCMS(SIM) | EP132B-SD | SOIL | In house: Referenced to USEPA 8270D GCMS Capillary column, SIM mode using large volume programmed temperature vaporisation injection. |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | SOIL | In-House. A portion of soil is extracted with MTBE. The extract is taken to dryness, made up in mobile phase. Analysis is by LC/MSMS, ESI Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1 |

| Preparation Methods | Method | Matrix | Method Descriptions |
|---------------------|--------|--------|---------------------|
|---------------------|--------|--------|---------------------|



| Preparation Methods | Method | Matrix | Method Descriptions |
|--|----------|--------|---|
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Sample Extraction for PFAS | EP231-PR | SOIL | In house |
| Dry and Pulverise (up to 100g) | GEO30 | SOIL | # |
| Tumbler Extraction of Solids for LVI (Non-concentrating) | ORG17D | SOIL | In house: 10g of sample, Na2SO4 and surrogate are extracted with 50mL 1:1 DCM/Acetone by end over end tumbling. An aliquot is concentrated by nitrogen blowdown to a reduced volume for analysis if required. |
| Organotin Sample Preparation | ORG35 | SOIL | In house: 20g sample is spiked with surrogate and leached in a methanol:acetic acid:UHP water mix and vacuum filtered. Reagents and solvents are added to the sample and the mixture tumbled. The butyltin compounds are simultaneously derivatised and extracted. The extract is further extracted with petroleum ether. The resultant extracts are combined and concentrated for analysis. |

[REDACTED]

From: [REDACTED]
Sent: Wednesday, 24 July 2019 12:33 PM
To: [REDACTED]
Subject: FW: [EXTERNAL] - RE: SRN for ALS Workorder : ES1922917 | Your Reference: 60592617 - URGENT

Hi [REDACTED] can you please look into this one? Thanks!

Best regards,

[REDACTED]

Client Services Co-ordinator, Environmental
Sydney



T +61 2 8784 8555
D +61 2 8784 8515
F +61 2 8784 8500

[REDACTED]
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

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From: [REDACTED]
Sent: Wednesday, 24 July 2019 9:44 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: [EXTERNAL] - RE: SRN for ALS Workorder : ES1922917 | Your Reference: 60592617 - URGENT

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi [REDACTED]

Note that for EG005-SD, we're analysing for total Iron in Sediments by ICPAES (NODG) only.

Apologies for not stating that the COC. Thanks!

[REDACTED]
Senior Environmental Engineer
[REDACTED]
[REDACTED]

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From: [REDACTED]
Sent: Tuesday, 23 July 2019 3:40 PM
To: [REDACTED]
[REDACTED]
Subject: RE: SRN for ALS Workorder : ES1922917 | Your Reference: 60592617 - URGENT

Hi [REDACTED]

ES1922917-011, 012: Labels on the jars CPB2f_ii and CPB2f_iii are correct. Can you please correct the COC? There should be 3 samples (each with 2 jars, 1 PFAS and 1 ziplock), where their ID start with CPB2f:

- CPB2f_i
- CPB2f_ii
- CPB2f_iii

There should only be 1 sample for CPB2k (2 jars, 1 PFAS and 1 ziplock)

Please call if you require further clarification. Thanks!

[REDACTED]
Senior Environmental Engineer
[REDACTED]
[REDACTED]

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From: [REDACTED]
Sent: Tuesday, 23 July 2019 12:15 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: SRN for ALS Workorder : ES1922917 | Your Reference: 60592617 - URGENT

[REDACTED]

Thanks for your message. Please find attached field sheet with sample numbers and planned locations, and actual positions of grabs collected. Triplicate split from CB2h rather than CB2k.

Call to discuss as necessary.

Kind regards

[REDACTED]

[REDACTED]

Principal Environmental Scientist

CEE

Consulting Environmental Engineers and Scientists

Unit 4

150 Chesterville Road

Cheltenham VIC 3192

Australia

[REDACTED]

[REDACTED]

www.cee.com.au

From: Rosli, Nazuha [REDACTED]

Sent: 23 July 2019 07:59

To: chidgey@cee.com.au

Cc: [REDACTED]

Subject: RE: SRN for ALS Workorder : ES1922917 | Your Reference: 60592617 - URGENT

Importance: High

Hi Scott,

ALS noted in the attached SRN that:

ES1922917-011, 012 id on the COC : CPB2k_ii and CPB2k_iii , but received labelled as CPB2f_ii and CPB2f_iii on the jar

Can you please confirm which labels are correct? Thanks.

[REDACTED]

Senior Environmental Engineer

AECOM

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From: angel-no-reply@alsglobal.com <angel-no-reply@alsglobal.com>

Sent: Monday, 22 July 2019 3:16 PM

To: [REDACTED]

Subject: SRN for ALS Workorder : ES1922917 | Your Reference: 60592617



Deliverables for ALS Workorder ES1922917

Project: 60592617

Dear [REDACTED]

Please find enclosed the following deliverables for **ES1922917**:

- ES1922917_0_SRN_190722150533.pdf
- ES1922917.60592617.SRN.zip
- ES1922917_COC.pdf

Report Recipients

- [REDACTED]
 - ES1922917_0_SRN_190722150533.pdf (Email)
 - ES1922917.60592617.SRN.zip (Email)
 - ES1922917_COC.pdf (Email)
- [REDACTED]
 - ES1922917_0_SRN_190722150533.pdf (Email)
 - ES1922917.60592617.SRN.zip (Email)
 - ES1922917_COC.pdf (Email)

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RIGHT SOLUTIONS | RIGHT PARTNER

Certificate of Analysis

ALS Laboratory Group Pty Ltd
2 Byth Street, Stafford, QLD 4053
pH 07 3552 8678
fax 07 3352 3662
samples.brisbane@alsenviro.com

ALS Environmental
Brisbane, QLD



CLIENT:

DATE REPORTED: 1-Aug-2019

COMPANY:

AECOM Australia Pty Ltd

DATE RECEIVED: 20-Jul-2019

ADDRESS:

COLLINS SQUARE LEVEL 10,
TOWER TWO 727 COLLINS
STREET, MELBOURNE 3004

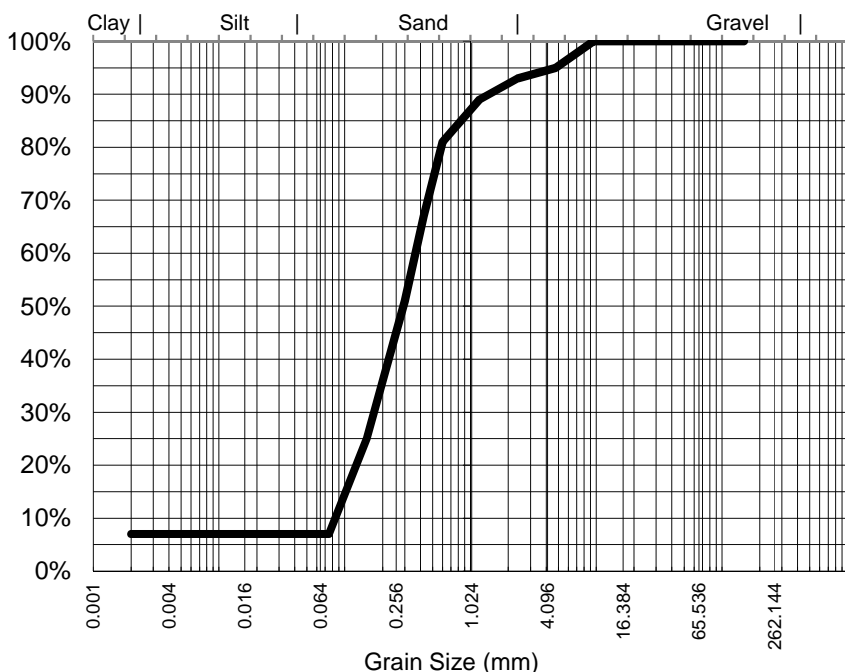
REPORT NO: ES1922917-001 / PSD

PROJECT:

60592617

SAMPLE ID: CPB2e

Particle Size Distribution



| Particle Size (mm) | Percent Passing |
|-------------------------|-----------------|
| 9.50 | 100% |
| 4.75 | 95% |
| 2.36 | 93% |
| 1.18 | 89% |
| 0.600 | 81% |
| 0.425 | 67% |
| 0.300 | 51% |
| 0.150 | 25% |
| 0.075 | 7% |
| Particle Size (microns) | |
| 75 | 7% |
| 57 | 7% |
| 41 | 7% |
| 20 | 7% |
| 10 | 7% |
| 5 | 7% |
| 2 | 7% |

Samples analysed as received.

| | |
|----------------------------|-------|
| Median Particle Size (mm)* | 0.294 |
|----------------------------|-------|

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments:

AS1289.3.6.3 states that this method is not applicable for samples containing <10% fines (<75um). Results should be assessed accordingly

Loss on Pretreatment

NA

Sample Description:

Test Method:

AS1289.3.6.3 2003

Soil Particle Density (<2.36mm)

2.66 g/cm3

NATA Accreditation: 825 Site: Newcastle

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Analysed:

24-Jul-19

Limit of Reporting:

1%

Dispersion Method

Shaker

Hydrometer Type

ASTM E100

Soil Chemist

Authorised Signatory

Certificate of Analysis

ALS Laboratory Group Pty Ltd
2 Byth Street, Stafford, QLD 4053
pH 07 3552 8678
fax 07 3352 3662
samples.brisbane@alsenviro.com

ALS Environmental
Brisbane, QLD



CLIENT:

DATE REPORTED: 1-Aug-2019

COMPANY:

AECOM Australia Pty Ltd

DATE RECEIVED: 20-Jul-2019

ADDRESS:

COLLINS SQUARE LEVEL 10,
TOWER TWO 727 COLLINS
STREET, MELBOURNE 3004

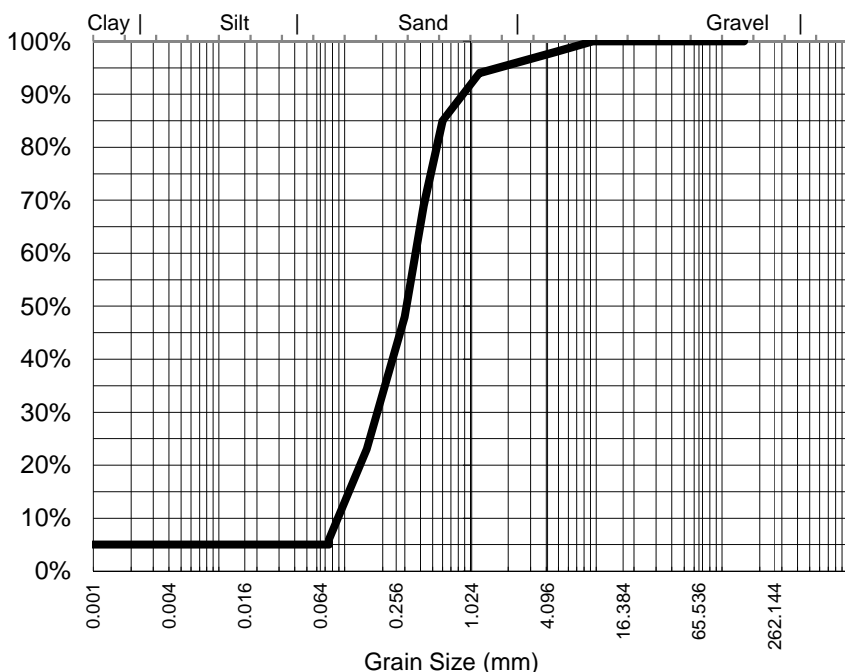
REPORT NO: ES1922917-002 / PSD

PROJECT:

60592617

SAMPLE ID: CPB2d

Particle Size Distribution



| Particle Size (mm) | Percent Passing |
|-------------------------|-----------------|
| 9.50 | 100% |
| 4.75 | 98% |
| 2.36 | 96% |
| 1.18 | 94% |
| 0.600 | 85% |
| 0.425 | 69% |
| 0.300 | 48% |
| 0.150 | 23% |
| 0.075 | 6% |
| Particle Size (microns) | |
| 75 | 5% |
| 56 | 5% |
| 40 | 5% |
| 20 | 5% |
| 10 | 5% |
| 5 | 5% |
| 1 | 5% |

Samples analysed as received.

| | |
|----------------------------|-------|
| Median Particle Size (mm)* | 0.312 |
|----------------------------|-------|

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments:

AS1289.3.6.3 states that this method is not applicable for samples containing <10% fines (<75um). Results should be assessed accordingly

Loss on Pretreatment

NA

Sample Description:

Test Method:

AS1289.3.6.3 2003

Soil Particle Density (<2.36mm)

2.73 g/cm3

NATA Accreditation: 825 Site: Newcastle

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Analysed:

24-Jul-19

Limit of Reporting:

1%

Dispersion Method

Shaker

Hydrometer Type

ASTM E100

Soil Chemist

Authorised Signatory

Certificate of Analysis

ALS Laboratory Group Pty Ltd
2 Byth Street, Stafford, QLD 4053
pH 07 3552 8678
fax 07 3352 3662
samples.brisbane@alsenviro.com

ALS Environmental
Brisbane, QLD



CLIENT:

DATE REPORTED: 1-Aug-2019

COMPANY:

AECOM Australia Pty Ltd

DATE RECEIVED: 20-Jul-2019

ADDRESS:

COLLINS SQUARE LEVEL 10,
TOWER TWO 727 COLLINS
STREET, MELBOURNE 3004

REPORT NO:

ES1922917-003 / PSD

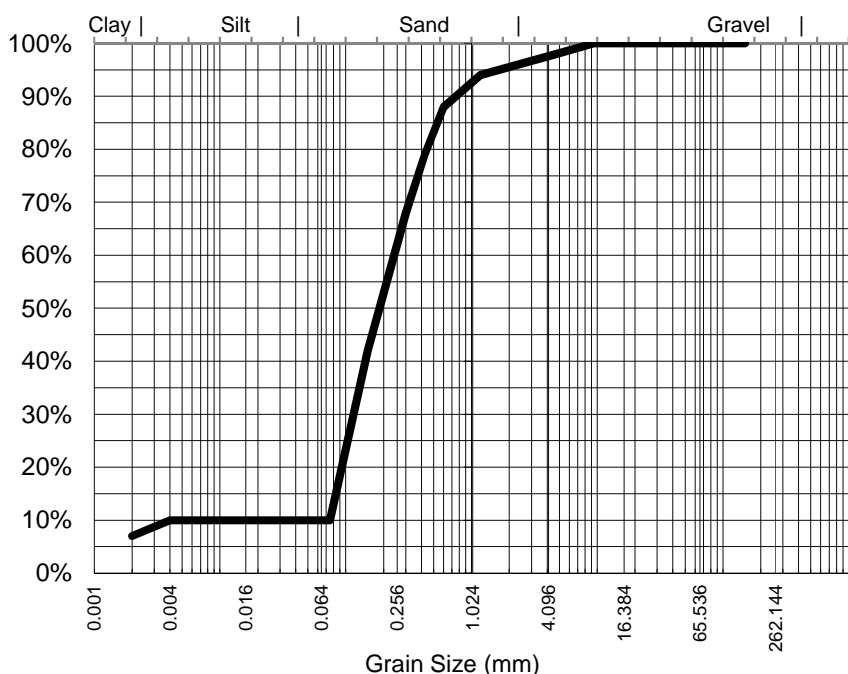
PROJECT:

60592617

SAMPLE ID:

CPB2f

Particle Size Distribution



| Particle Size (mm) | Percent Passing |
|-------------------------|-----------------|
| 9.50 | 100% |
| 4.75 | 98% |
| 2.36 | 96% |
| 1.18 | 94% |
| 0.600 | 88% |
| 0.425 | 79% |
| 0.300 | 68% |
| 0.150 | 42% |
| 0.075 | 10% |
| Particle Size (microns) | |
| 75 | 10% |
| 57 | 10% |
| 41 | 10% |
| 20 | 10% |
| 10 | 10% |
| 5 | 10% |
| 2 | 7% |

Samples analysed as received.

| | |
|----------------------------|-------|
| Median Particle Size (mm)* | 0.196 |
|----------------------------|-------|

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments:

Loss on Pretreatment NA

Sample Description:

Test Method: AS1289.3.6.3 2003

Soil Particle Density (<2.36mm) 2.66 g/cm3

NATA Accreditation: 825 **Site:** Newcastle

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Analysed: 24-Jul-19

Limit of Reporting: 1%

Dispersion Method Shaker

Hydrometer Type ASTM E100

Soil Chemist
Authorised Signatory

Certificate of Analysis

ALS Laboratory Group Pty Ltd
2 Byth Street, Stafford, QLD 4053
pH 07 3552 8678
fax 07 3352 3662
samples.brisbane@alsenviro.com

ALS Environmental
Brisbane, QLD



CLIENT:

DATE REPORTED: 1-Aug-2019

COMPANY:

AECOM Australia Pty Ltd

DATE RECEIVED: 20-Jul-2019

ADDRESS:

COLLINS SQUARE LEVEL 10,
TOWER TWO 727 COLLINS
STREET, MELBOURNE 3004

REPORT NO:

ES1922917-004 / PSD

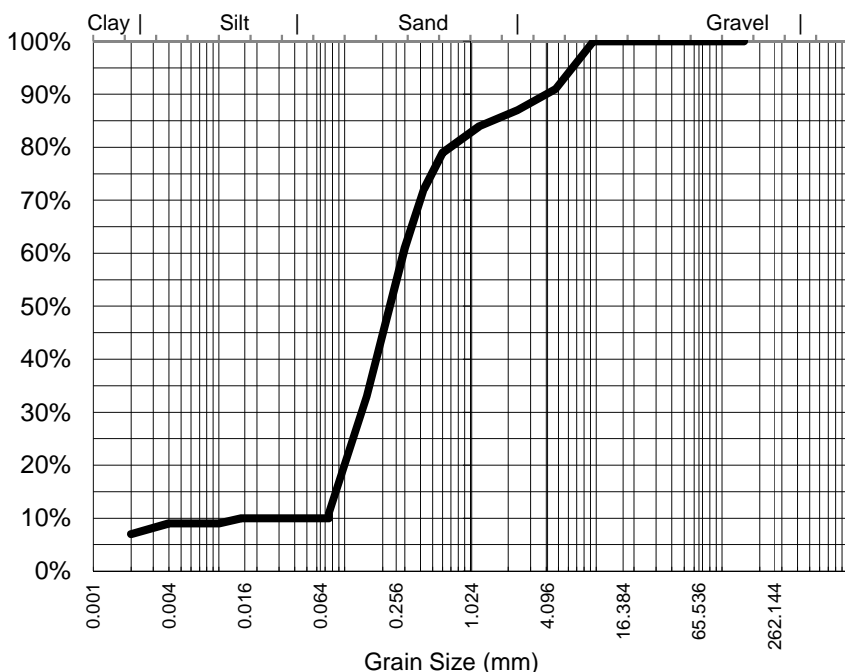
PROJECT:

60592617

SAMPLE ID:

CPB2g

Particle Size Distribution



| Particle Size (mm) | Percent Passing |
|-------------------------|-----------------|
| 9.50 | 100% |
| 4.75 | 91% |
| 2.36 | 87% |
| 1.18 | 84% |
| 0.600 | 79% |
| 0.425 | 72% |
| 0.300 | 61% |
| 0.150 | 33% |
| 0.075 | 11% |
| Particle Size (microns) | |
| 75 | 10% |
| 57 | 10% |
| 41 | 10% |
| 20 | 10% |
| 10 | 9% |
| 5 | 9% |
| 2 | 7% |

Samples analysed as received.

| | |
|----------------------------|-------|
| Median Particle Size (mm)* | 0.241 |
|----------------------------|-------|

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments:

Loss on Pretreatment NA

Sample Description:

Test Method: AS1289.3.6.3 2003

Soil Particle Density (<2.36mm) 2.68 g/cm3

NATA Accreditation: 825 Site: Newcastle
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Analysed: 24-Jul-19

Limit of Reporting: 1%

Dispersion Method Shaker

Hydrometer Type ASTM E100

Soil Chemist
Authorised Signatory

Certificate of Analysis

ALS Laboratory Group Pty Ltd
2 Byth Street, Stafford, QLD 4053
pH 07 3552 8678
fax 07 3352 3662
samples.brisbane@alsenviro.com

ALS Environmental
Brisbane, QLD



CLIENT:

DATE REPORTED: 1-Aug-2019

COMPANY:

AECOM Australia Pty Ltd

DATE RECEIVED: 20-Jul-2019

ADDRESS:

COLLINS SQUARE LEVEL 10,
TOWER TWO 727 COLLINS
STREET, MELBOURNE 3004

REPORT NO:

ES1922917-005 / PSD

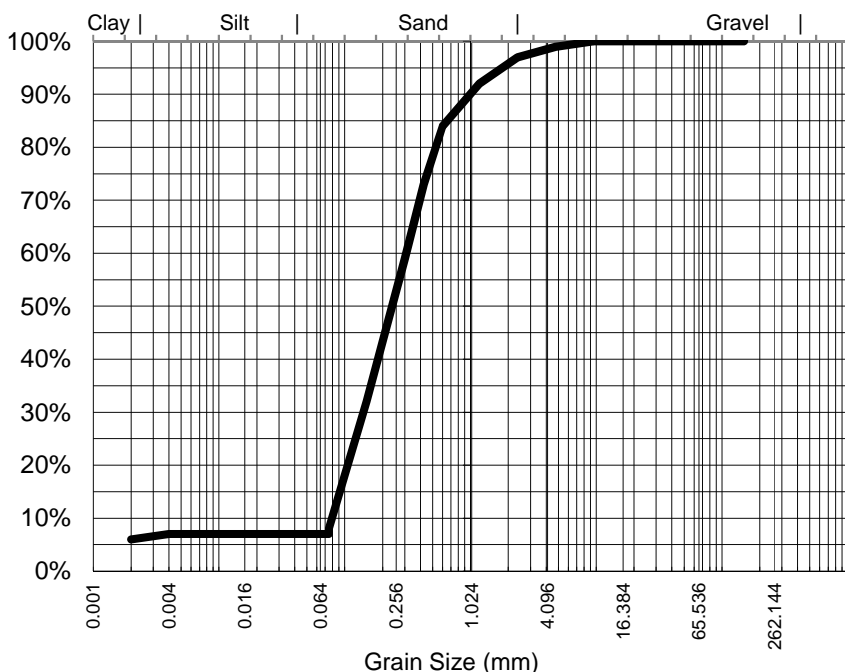
PROJECT:

60592617

SAMPLE ID:

CPB2h_i

Particle Size Distribution



| Particle Size (mm) | Percent Passing |
|-------------------------|-----------------|
| 9.50 | 100% |
| 4.75 | 99% |
| 2.36 | 97% |
| 1.18 | 92% |
| 0.600 | 84% |
| 0.425 | 73% |
| 0.300 | 59% |
| 0.150 | 32% |
| 0.075 | 8% |
| Particle Size (microns) | |
| 75 | 7% |
| 57 | 7% |
| 41 | 7% |
| 20 | 7% |
| 10 | 7% |
| 5 | 7% |
| 2 | 6% |

Samples analysed as received.

| | |
|----------------------------|-------|
| Median Particle Size (mm)* | 0.250 |
|----------------------------|-------|

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments:

AS1289.3.6.3 states that this method is not applicable for samples containing <10% fines (<75µm). Results should be assessed accordingly

Loss on Pretreatment

NA

Sample Description:

Test Method:

AS1289.3.6.3 2003

Soil Particle Density (<2.36mm)

2.66

g/cm³

NATA Accreditation: 825 Site: Newcastle

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Analysed:

24-Jul-19

Limit of Reporting:

1%

Dispersion Method

Shaker

Hydrometer Type

ASTM E100

Soil Chemist

Authorised Signatory

Certificate of Analysis

ALS Laboratory Group Pty Ltd
2 Byth Street, Stafford, QLD 4053
pH 07 3552 8678
fax 07 3352 3662
samples.brisbane@alsenviro.com

ALS Environmental
Brisbane, QLD



CLIENT:

DATE REPORTED: 1-Aug-2019

COMPANY:

AECOM Australia Pty Ltd

DATE RECEIVED: 20-Jul-2019

ADDRESS:

COLLINS SQUARE LEVEL 10,
TOWER TWO 727 COLLINS
STREET, MELBOURNE 3004

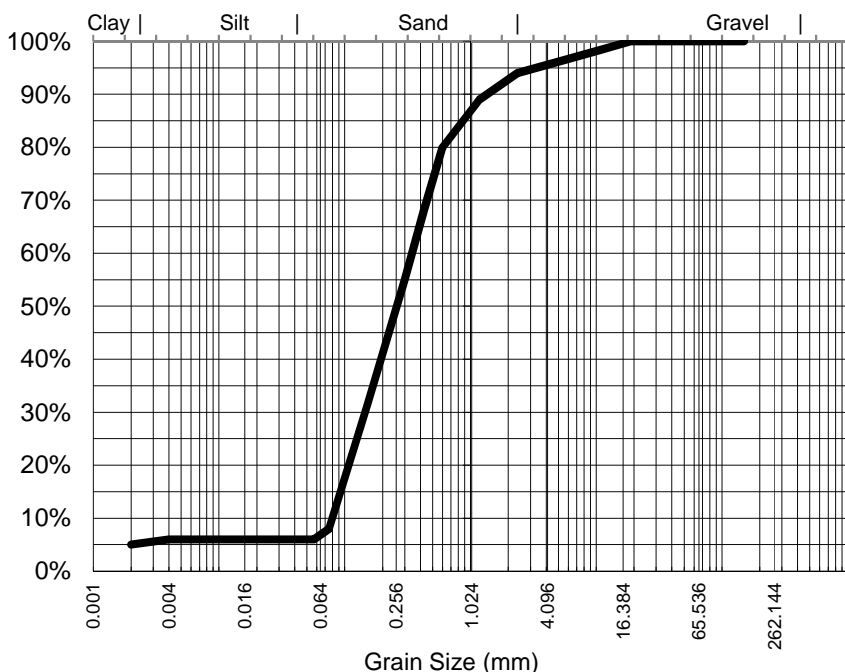
REPORT NO: ES1922917-006 / PSD

PROJECT:

60592617

SAMPLE ID: CPB2h_ii

Particle Size Distribution



| Particle Size (mm) | Percent Passing |
|-------------------------|-----------------|
| 19.0 | 100% |
| 9.50 | 98% |
| 4.75 | 96% |
| 2.36 | 94% |
| 1.18 | 89% |
| 0.600 | 80% |
| 0.425 | 68% |
| 0.300 | 55% |
| 0.150 | 31% |
| 0.075 | 8% |
| Particle Size (microns) | |
| 75 | 8% |
| 57 | 6% |
| 41 | 6% |
| 20 | 6% |
| 10 | 6% |
| 5 | 6% |
| 2 | 5% |

Samples analysed as received.

| | |
|----------------------------|-------|
| Median Particle Size (mm)* | 0.269 |
|----------------------------|-------|

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments:

AS1289.3.6.3 states that this method is not applicable for samples containing <10% fines (<75µm). Results should be assessed accordingly

Loss on Pretreatment

NA

Sample Description:

Test Method:

AS1289.3.6.3 2003

Soil Particle Density (<2.36mm)

2.67 g/cm3

NATA Accreditation: 825 Site: Newcastle

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Analysed:

24-Jul-19

Limit of Reporting:

1%

Dispersion Method

Shaker

Hydrometer Type

ASTM E100

Soil Chemist

Authorised Signatory

Certificate of Analysis

ALS Laboratory Group Pty Ltd
2 Byth Street, Stafford, QLD 4053
pH 07 3552 8678
fax 07 3352 3662
samples.brisbane@alsenviro.com

ALS Environmental
Brisbane, QLD



CLIENT:

DATE REPORTED: 1-Aug-2019

COMPANY:

AECOM Australia Pty Ltd

DATE RECEIVED: 20-Jul-2019

ADDRESS:

COLLINS SQUARE LEVEL 10,
TOWER TWO 727 COLLINS
STREET, MELBOURNE 3004

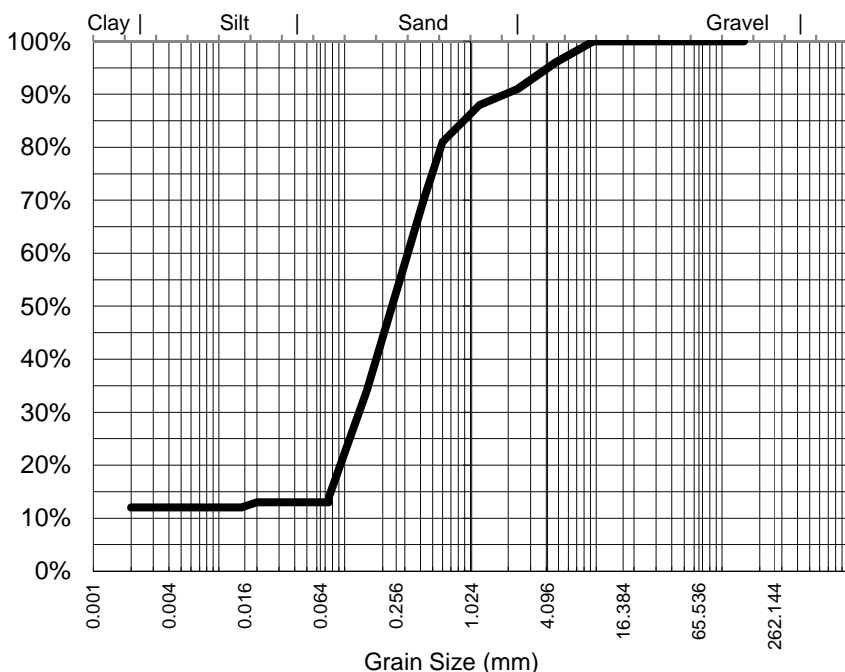
REPORT NO: ES1922917-008 / PSD

PROJECT:

60592617

SAMPLE ID: CPB2i

Particle Size Distribution



| Particle Size (mm) | Percent Passing |
|-------------------------|-----------------|
| 9.50 | 100% |
| 4.75 | 96% |
| 2.36 | 91% |
| 1.18 | 88% |
| 0.600 | 81% |
| 0.425 | 70% |
| 0.300 | 58% |
| 0.150 | 34% |
| 0.075 | 14% |
| Particle Size (microns) | |
| 75 | 13% |
| 57 | 13% |
| 41 | 13% |
| 20 | 13% |
| 10 | 12% |
| 5 | 12% |
| 2 | 12% |

Samples analysed as received.

| | |
|----------------------------|-------|
| Median Particle Size (mm)* | 0.250 |
|----------------------------|-------|

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments:

Loss on Pretreatment NA

Sample Description:

Test Method: AS1289.3.6.3 2003

Soil Particle Density (<2.36mm) 2.67 g/cm3

NATA Accreditation: 825 **Site:** Newcastle

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Analysed: 24-Jul-19

Limit of Reporting: 1%

Dispersion Method Shaker

Hydrometer Type ASTM E100

Signature

Soil Chemist
Authorised Signatory

Certificate of Analysis

ALS Laboratory Group Pty Ltd
2 Byth Street, Stafford, QLD 4053
pH 07 3552 8678
fax 07 3352 3662
samples.brisbane@alsenviro.com

ALS Environmental
Brisbane, QLD



CLIENT:

DATE REPORTED: 1-Aug-2019

COMPANY:

AECOM Australia Pty Ltd

DATE RECEIVED: 20-Jul-2019

ADDRESS:

COLLINS SQUARE LEVEL 10,
TOWER TWO 727 COLLINS
STREET, MELBOURNE 3004

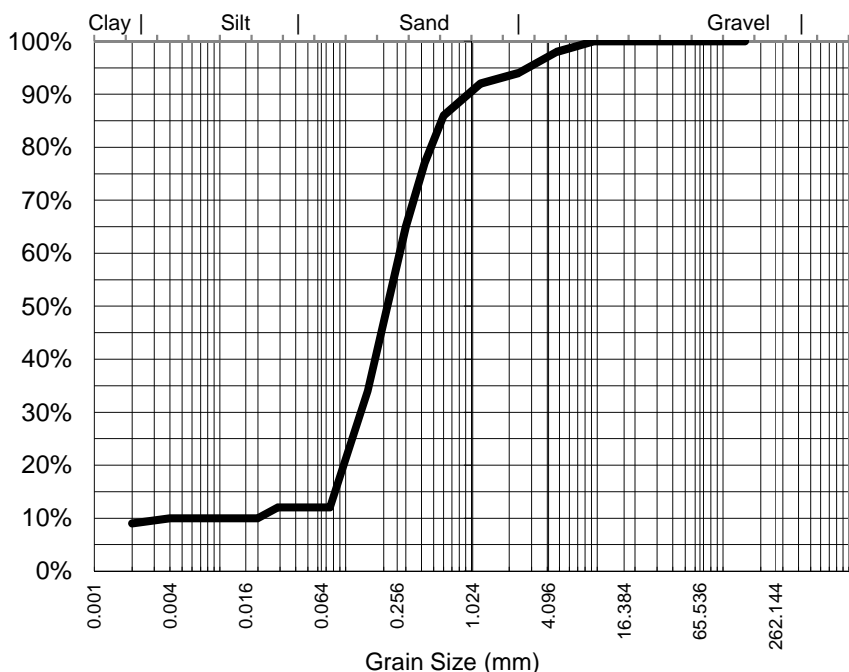
REPORT NO: ES1922917-009 / PSD

PROJECT:

60592617

SAMPLE ID: CPB2j

Particle Size Distribution



| Particle Size (mm) | Percent Passing |
|-------------------------|-----------------|
| 9.50 | 100% |
| 4.75 | 98% |
| 2.36 | 94% |
| 1.18 | 92% |
| 0.600 | 86% |
| 0.425 | 77% |
| 0.300 | 65% |
| 0.150 | 34% |
| 0.075 | 12% |
| Particle Size (microns) | |
| 75 | 12% |
| 57 | 12% |
| 41 | 12% |
| 20 | 10% |
| 10 | 10% |
| 5 | 10% |
| 2 | 9% |

| | |
|----------------------------|-------|
| Median Particle Size (mm)* | 0.227 |
|----------------------------|-------|

Samples analysed as received.

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments:

Loss on Pretreatment NA

Sample Description:

Test Method: AS1289.3.6.3 2003

Soil Particle Density (<2.36mm) 2.66 g/cm3

NATA Accreditation: 825 **Site:** Newcastle

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Analysed: 24-Jul-19

Limit of Reporting: 1%

Dispersion Method Shaker

Hydrometer Type ASTM E100

Signature

Soil Chemist
Authorised Signatory

Certificate of Analysis

ALS Laboratory Group Pty Ltd
2 Byth Street, Stafford, QLD 4053
pH 07 3552 8678
fax 07 3352 3662
samples.brisbane@alsenviro.com

ALS Environmental
Brisbane, QLD



CLIENT:

DATE REPORTED: 1-Aug-2019

COMPANY:

AECOM Australia Pty Ltd

DATE RECEIVED: 20-Jul-2019

ADDRESS:

COLLINS SQUARE LEVEL 10,
TOWER TWO 727 COLLINS
STREET, MELBOURNE 3004

REPORT NO:

ES1922917-010 / PSD

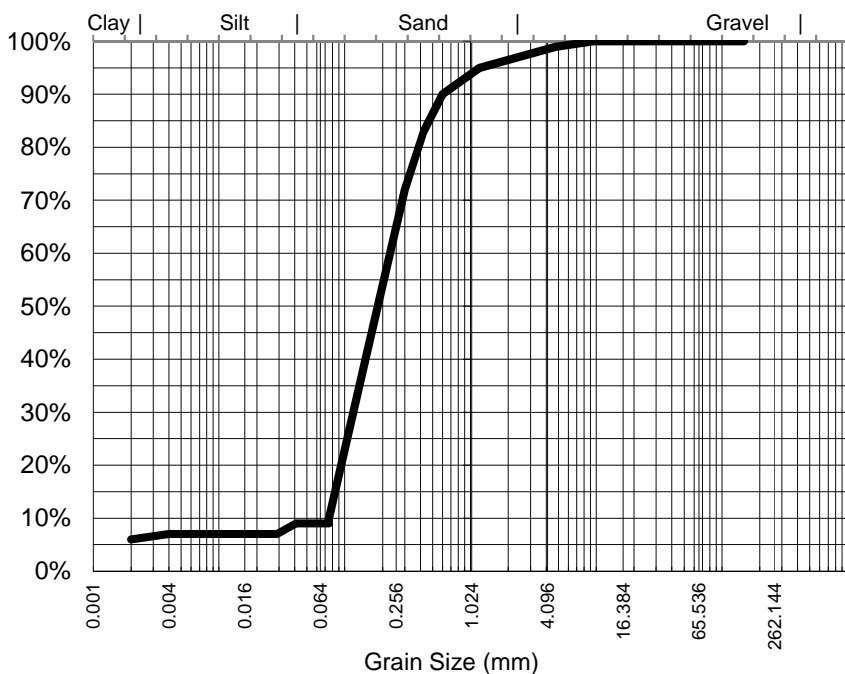
PROJECT:

60592617

SAMPLE ID:

CPB2k_j

Particle Size Distribution



| Particle Size (mm) | Percent Passing |
|-------------------------|-----------------|
| 9.50 | 100% |
| 4.75 | 99% |
| 2.36 | 97% |
| 1.18 | 95% |
| 0.600 | 90% |
| 0.425 | 83% |
| 0.300 | 72% |
| 0.150 | 41% |
| 0.075 | 10% |
| Particle Size (microns) | |
| 75 | 9% |
| 57 | 9% |
| 41 | 9% |
| 20 | 7% |
| 10 | 7% |
| 5 | 7% |
| 2 | 6% |

Samples analysed as received.

| | |
|----------------------------|-------|
| Median Particle Size (mm)* | 0.194 |
|----------------------------|-------|

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments:

AS1289.3.6.3 states that this method is not applicable for samples containing <10% fines (<75µm). Results should be assessed accordingly

Loss on Pretreatment

NA

Sample Description:

Test Method:

AS1289.3.6.3 2003

Soil Particle Density (<2.36mm)

2.66

g/cm3

NATA Accreditation: 825 Site: Newcastle

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Analysed:

24-Jul-19

Limit of Reporting:

1%

Dispersion Method

Shaker

Hydrometer Type

ASTM E100

Soil Chemist

Authorised Signatory

Certificate of Analysis

ALS Laboratory Group Pty Ltd
2 Byth Street, Stafford, QLD 4053
pH 07 3552 8678
fax 07 3352 3662
samples.brisbane@alsenviro.com

ALS Environmental
Brisbane, QLD



CLIENT:

DATE REPORTED: 1-Aug-2019

COMPANY:

AECOM Australia Pty Ltd

DATE RECEIVED: 20-Jul-2019

ADDRESS:

COLLINS SQUARE LEVEL 10,
TOWER TWO 727 COLLINS
STREET, MELBOURNE 3004

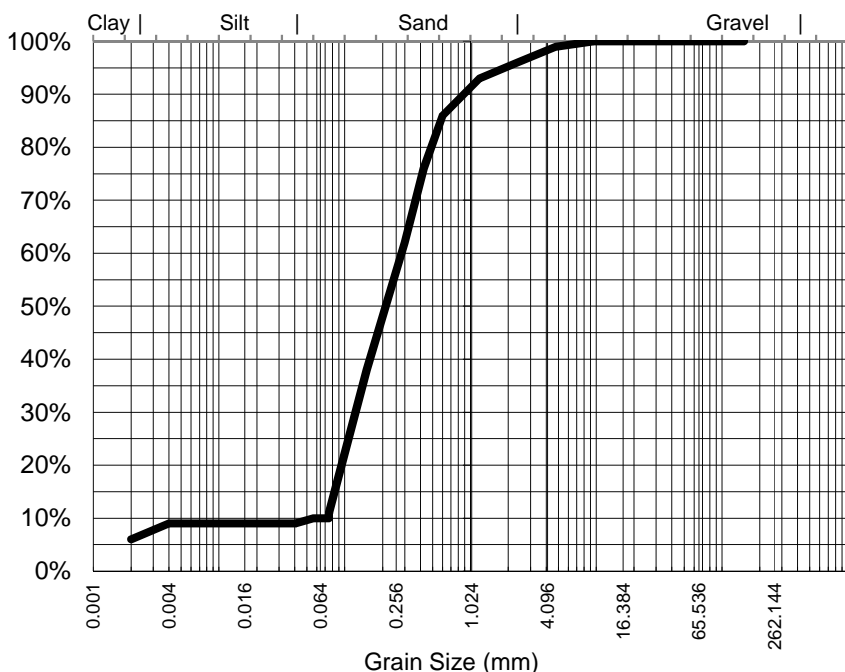
REPORT NO: ES1922917-011 / PSD

PROJECT:

60592617

SAMPLE ID: CPB2f_ii

Particle Size Distribution



| Particle Size (mm) | Percent Passing |
|-------------------------|-----------------|
| 9.50 | 100% |
| 4.75 | 99% |
| 2.36 | 96% |
| 1.18 | 93% |
| 0.600 | 86% |
| 0.425 | 76% |
| 0.300 | 62% |
| 0.150 | 38% |
| 0.075 | 11% |
| Particle Size (microns) | |
| 75 | 10% |
| 57 | 10% |
| 41 | 9% |
| 20 | 9% |
| 10 | 9% |
| 5 | 9% |
| 2 | 6% |

Samples analysed as received.

| | |
|----------------------------|-------|
| Median Particle Size (mm)* | 0.225 |
|----------------------------|-------|

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments:

Loss on Pretreatment NA

Sample Description:

Test Method: AS1289.3.6.3 2003

Soil Particle Density (<2.36mm) 2.67 g/cm3

NATA Accreditation: 825 Site: Newcastle
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Analysed: 24-Jul-19

Limit of Reporting: 1%

Dispersion Method Shaker

Hydrometer Type ASTM E100

Soil Chemist
Authorised Signatory

Certificate of Analysis

ALS Laboratory Group Pty Ltd
2 Byth Street, Stafford, QLD 4053
pH 07 3552 8678
fax 07 3352 3662
samples.brisbane@alsenviro.com

ALS Environmental
Brisbane, QLD



CLIENT:

DATE REPORTED: 1-Aug-2019

COMPANY:

AECOM Australia Pty Ltd

DATE RECEIVED: 20-Jul-2019

ADDRESS:

COLLINS SQUARE LEVEL 10,
TOWER TWO 727 COLLINS
STREET, MELBOURNE 3004

REPORT NO:

ES1922917-012 / PSD

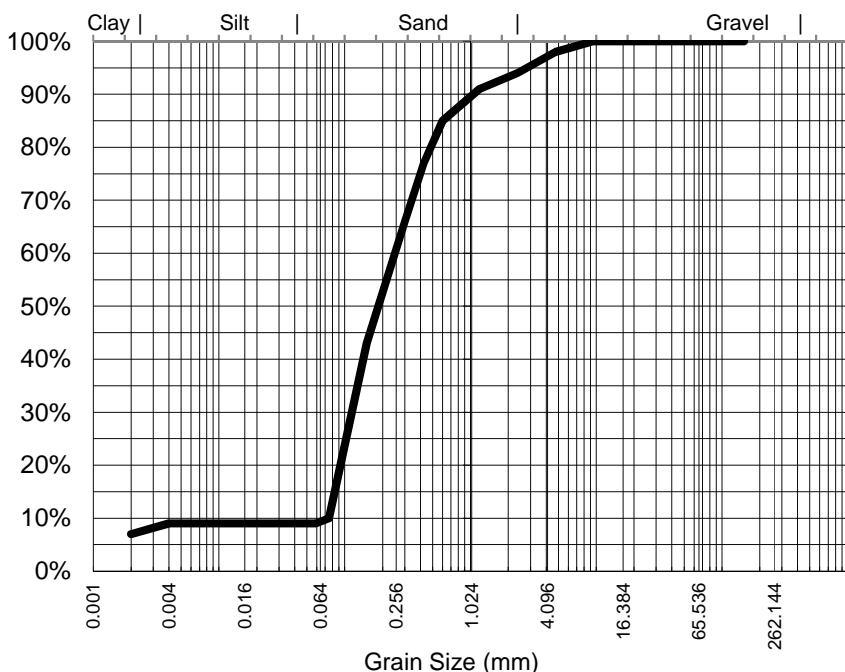
PROJECT:

60592617

SAMPLE ID:

CPB2f_iii

Particle Size Distribution



| Particle Size (mm) | Percent Passing |
|-------------------------|-----------------|
| 9.50 | 100% |
| 4.75 | 98% |
| 2.36 | 94% |
| 1.18 | 91% |
| 0.600 | 85% |
| 0.425 | 77% |
| 0.300 | 66% |
| 0.150 | 43% |
| 0.075 | 10% |
| Particle Size (microns) | |
| 75 | 10% |
| 59 | 9% |
| 42 | 9% |
| 21 | 9% |
| 11 | 9% |
| 5 | 9% |
| 2 | 7% |

Samples analysed as received.

| | |
|----------------------------|-------|
| Median Particle Size (mm)* | 0.196 |
|----------------------------|-------|

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments:

Loss on Pretreatment NA

Sample Description:

Test Method: AS1289.3.6.3 2003

Soil Particle Density (<2.36mm) 2.59 g/cm3

NATA Accreditation: 825 Site: Newcastle
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Analysed: 24-Jul-19

Limit of Reporting: 1%

Dispersion Method Shaker

Hydrometer Type ASTM E100

Soil Chemist
Authorised Signatory

Certificate of Analysis

ALS Laboratory Group Pty Ltd
2 Byth Street, Stafford, QLD 4053
pH 07 3552 8678
fax 07 3352 3662
samples.brisbane@alsenviro.com

ALS Environmental
Brisbane, QLD



CLIENT:

DATE REPORTED: 1-Aug-2019

COMPANY:

AECOM Australia Pty Ltd

DATE RECEIVED: 20-Jul-2019

ADDRESS:

COLLINS SQUARE LEVEL 10,
TOWER TWO 727 COLLINS
STREET, MELBOURNE 3004

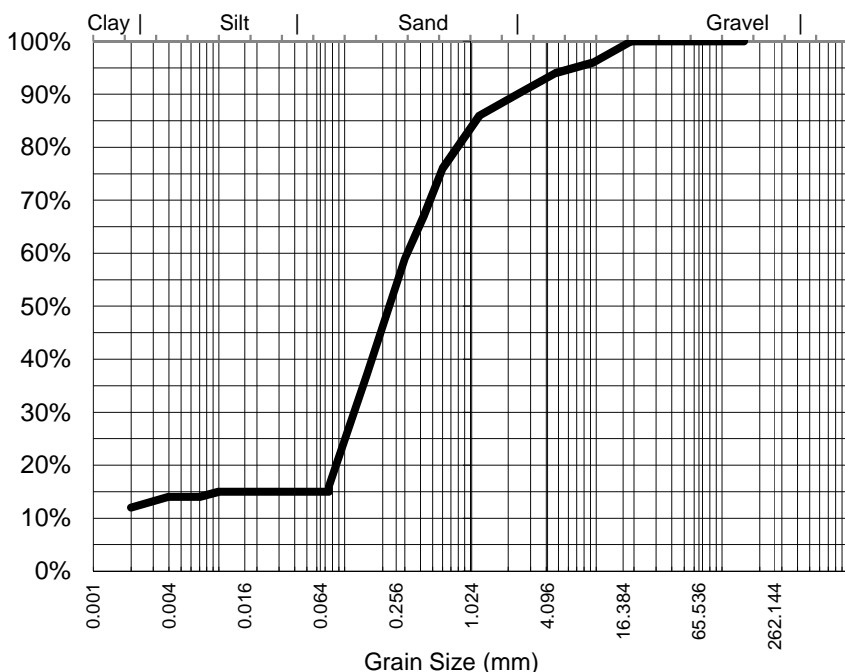
REPORT NO: ES1922917-013 / PSD

PROJECT:

60592617

SAMPLE ID: CPB2I

Particle Size Distribution



| Particle Size (mm) | Percent Passing |
|-------------------------|-----------------|
| 19.0 | 100% |
| 9.50 | 96% |
| 4.75 | 94% |
| 2.36 | 90% |
| 1.18 | 86% |
| 0.600 | 76% |
| 0.425 | 67% |
| 0.300 | 59% |
| 0.150 | 37% |
| 0.075 | 16% |
| Particle Size (microns) | |
| 75 | 15% |
| 57 | 15% |
| 41 | 15% |
| 20 | 15% |
| 10 | 15% |
| 5 | 14% |
| 2 | 12% |

Samples analysed as received.

| | |
|----------------------------|-------|
| Median Particle Size (mm)* | 0.239 |
|----------------------------|-------|

Median Particle Size is not covered under the current scope of ALS's NATA accreditation.

Sample Comments:

Loss on Pretreatment NA

Sample Description:

Test Method: AS1289.3.6.3 2003

Soil Particle Density (<2.36mm) 2.68 g/cm3

NATA Accreditation: 825 **Site:** Newcastle

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Analysed: 24-Jul-19

Limit of Reporting: 1%

Dispersion Method Shaker

Hydrometer Type ASTM E100

Soil Chemist
Authorised Signatory

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM2005382

| | |
|--|---|
| <p>Client : AECOM Australia Pty Ltd</p> <p>Contact : [REDACTED]</p> <p>Address : COLLINS SQUARE LEVEL 10, TOWER
TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004</p> <p>E-mail : [REDACTED]</p> <p>Telephone : ----</p> <p>Facsimile : ----</p> <p>Project : 60592634</p> <p>Order number : 60592634 1.0</p> <p>C-O-C number : ----</p> <p>Site : GIJPP</p> <p>Sampler : SF</p> | <p>Laboratory : Environmental Division Melbourne</p> <p>Contact : [REDACTED]</p> <p>Address : 4 Westall Rd Springvale VIC Australia
3171</p> <p>E-mail : [REDACTED]@alsglobal.com</p> <p>Telephone : +6138549 9645</p> <p>Facsimile : +61-3-8549 9626</p> <p>Page : 1 of 3</p> <p>Quote number : EB2017AECOMAU0014 (EN/004/16)</p> <p>QC Level : NEPM 2013 B3 & ALS QC Standard</p> |
|--|---|

Dates

| | |
|---|--|
| <p>Date Samples Received : 31-Mar-2020 13:20</p> <p>Client Requested Due : 07-Apr-2020</p> <p>Date : </p> | <p>Issue Date : 31-Mar-2020</p> <p>Scheduled Reporting Date : 07-Apr-2020</p> |
|---|--|

Delivery Details

| | |
|---|---|
| <p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 1</p> <p>Receipt Detail :</p> | <p>Security Seal : Intact.</p> <p>Temperature : 5.4°C - Ice present</p> <p>No. of samples received / analysed : 9 / 7</p> |
|---|---|

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Sydney.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

☐ **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

| Laboratory sample ID | Client sampling date / time | Client sample ID | (On Hold) SOIL
No analysis requested | SOIL - EA055-103
Moisture Content | SOIL - EP231 (solids)
PFAS - Short Suite (12 analytes) | SOIL - P-16 + Total Cr
IWRG 621 (including Total Chromium) |
|----------------------|-----------------------------|------------------|---|--------------------------------------|---|---|
| EM2005382-001 | 31-Mar-2020 00:00 | CPT002_BH55_0.1 | | ☐ | ☐ | ☐ |
| EM2005382-002 | 31-Mar-2020 00:00 | CPT002_BH55_0.5 | ☐ | | | |
| EM2005382-003 | 31-Mar-2020 00:00 | CPT002_BH56_0.1 | | ☐ | ☐ | ☐ |
| EM2005382-004 | 31-Mar-2020 00:00 | CPT002_BH58_0.1 | | ☐ | ☐ | ☐ |
| EM2005382-005 | 31-Mar-2020 00:00 | CPT002_BH58_0.5 | ☐ | | | |
| EM2005382-006 | 31-Mar-2020 00:00 | QC01_310320 | | ☐ | ☐ | ☐ |
| EM2005382-009 | 31-Mar-2020 00:00 | QC05_310320 | | ☐ | ☐ | |

Matrix: **WATER**

| Laboratory sample ID | Client sampling date / time | Client sample ID | WATER - EP231
PFAS - Short Suite (12 analytes) | WATER - W-05T
TRH/BTEXN/S Metals (Total) | WATER - W-12
OC/OP Pesticides |
|----------------------|-----------------------------|------------------|---|---|----------------------------------|
| EM2005382-007 | 31-Mar-2020 00:00 | QC03_310320 | ☐ | ☐ | ☐ |
| EM2005382-008 | 31-Mar-2020 00:00 | QC04_310320 | ☐ | ☐ | ☐ |

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.



Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email AP_CustomerService.ANZ@aecom.com

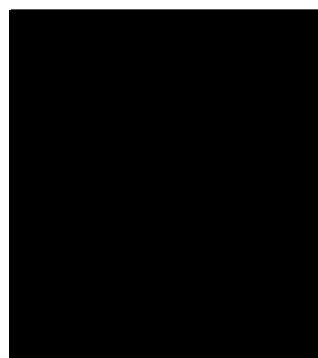
- Chain of Custody (CoC) (COC)

Email AP_CustomerService.ANZ@aecom.com



- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)
- Electronic SRN for EQUIS (ESRN_EQUIS)
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)

Email
Email
Email
Email
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ANZ
AFQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

| | | | | | | | |
|--|--------------------------|-----------------|----------|---|--------------|---|--|
| CONSULTANT: AFQM | | ADDRESS/OFFICE: | | SAMPLER: Sharon Fung | | Destination Laboratory | |
| PROJECT MANAGER (PM): | | SITE: GP | | MOBILE: 09 458 1234 | | ALS | |
| PROJECT NUMBER & TASK CO: 60582634 | | P.O. NO.: | | ANALYSIS REQUIRED TO: PFAS | | PHONE: 09 458 1234 | |
| RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED including SITES (note - suite codes must be listed to attract suite prices) | | Notes: e.g. Highly contaminated sample
e.g. "High PAHs expected"
Extra volume for QC or trace LORs etc. | |
| FOR LABORATORY USE ONLY | | | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | |
| COOLER/SEAL (date/app/other): | | | | | | | |
| Infect: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | | | | | | | |
| SAMPLE TEMPERATURE: | | | | | | | |
| CHILLED: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W=Water) | | | | CONTAINER INFORMATION | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | |
| 1 | CPT002 - BH55-0.1 | S | 31/03/20 | | Sus | 2 | |
| 2 | CPT002 - BH55-0.5 | | | | | 2 | |
| 3 | CPT002 - BH56-0.1 | | | | | 2 | |
| 4 | CPT004 - BH58-0.1 | | | | | 2 | |
| 5 | CPT004 - BH58-0.5 | | | | | 2 | |
| 6 | QC01 - 310320 | V | | | | 1 | |
| 7 | QC02 - 310320 | | | | | | |
| 8 | QC03 - 310320 | W | | | P, AG, VS, H | 5 | |
| 9 | QC04 - 310320 | W | | | P, AG, VS, H | 5 | |
| 10 | QC05 - 310320 | S | | | Sus | 1 | |
| RELINQUISHED BY: | | RECEIVED BY: | | RECEIVED BY: | | METHOD OF SHIPMENT | |
| Name: | | Name: | | Name: | | Con'l Note No: | |
| Date: | | Date: | | Date: | | Transport Co: | |
| Time: | | Time: | | Time: | | | |

Environmental Division
Melbourne
Work Order Reference
EM2005382



Telephone : + 61-3-8549 9870

AFQM 31/3 13.20
COC Page of

CERTIFICATE OF ANALYSIS

| | |
|--|--|
| Work Order : EM2005382
Amendment : 1
Client : AECOM Australia Pty Ltd
Contact : [REDACTED]
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004
Telephone : ----
Project : 60592634
Order number : 60592634 1.0
C-O-C number : ----
Sampler : [REDACTED]
Site : GIJPP
Quote number : EN/004/16
No. of samples received : 9
No. of samples analysed : 7 | Page : 1 of 15
Laboratory : Environmental Division Melbourne
Contact : [REDACTED]
Address : 4 Westall Rd Springvale VIC Australia 3171
Telephone : +6138549 9645
Date Samples Received : 31-Mar-2020 13:20
Date Analysis Commenced : 01-Apr-2020
Issue Date : 08-Apr-2020 16:42 |
|--|--|



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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□ □ □ □ □ □ □ □ □ □ □ □ □ □

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Senior Inorganic Chemist
LCMS Coordinator
2IC Organic Chemist
Senior Organic Chemist

Melbourne Inorganics, Springvale, VIC
Sydney Organics, Smithfield, NSW
Melbourne Organics, Springvale, VIC
Melbourne Organics, Springvale, VIC



The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (8/4/20): This report has been amended and re-released to allow the reporting of the extended PFAS suite on all samples where the short suite has been requested.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.



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Sub-Matrix: SOIL
 (Matrix: SOIL)

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| | | | | CPT002_BH55_0.1 | CPT002_BH56_0.1 | CPT002_BH58_0.1 | QC01_310320 | QC05_310320 |
|---|-------------------|-----|---------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | | | | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 |
| | | | | EM2005382-001 | EM2005382-003 | EM2005382-004 | EM2005382-006 | EM2005382-009 |
| | | | | Result | Result | Result | Result | Result |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| pH (CaCl2) | ---- | 0.1 | pH Unit | 7.5 | 7.1 | 6.2 | 6.2 | 5.6 |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | 11.9 | 3.3 | 18.5 | 19.0 | <1.0 |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | 17 | 28 | 9 | 11 | <5 |
| Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | <1 | <1 | <1 |
| Chromium | 7440-47-3 | 2 | mg/kg | 36 | 16 | 57 | 64 | <2 |
| Copper | 7440-50-8 | 5 | mg/kg | 37 | 23 | 8 | <5 | <5 |
| Lead | 7439-92-1 | 5 | mg/kg | 56 | 8 | 11 | 12 | <5 |
| Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | <2 | <2 | <2 |
| Nickel | 7440-02-0 | 2 | mg/kg | 9 | 21 | 10 | 10 | <2 |
| Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | <5 | <5 | <5 |
| Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | <2 | <2 | <2 |
| Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | <5 | <5 | <5 |
| Zinc | 7440-66-6 | 5 | mg/kg | 146 | 21 | 18 | <5 | <5 |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | <1 | <1 | <1 |
| EK040T: Fluoride Total | | | | | | | | |
| Fluoride | 16984-48-8 | 40 | mg/kg | 240 | 250 | 240 | 290 | <40 |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | 5.9 | <0.1 | <0.1 | <0.1 | <0.1 |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| meta- & para-Xylene | 108-38-3 106-42-3 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| ^ Sum of monocyclic aromatic hydrocarbons | ---- | 0.2 | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

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| | | | | CPT002_BH55_0.1 | CPT002_BH56_0.1 | CPT002_BH58_0.1 | QC01_310320 | QC05_310320 |
|--|--|--|--|-------------------|-------------------|-------------------|-------------------|-------------------|
| | | | | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 |
| | | | | EM2005382-001 | EM2005382-003 | EM2005382-004 | EM2005382-006 | EM2005382-009 |
| | | | | Result | Result | Result | Result | Result |

EP074A: Monocyclic Aromatic Hydrocarbons - Continued

| | | | | | | | | |
|-----------------|------|-----|-------|------|------|------|------|------|
| ^ Total Xylenes | ---- | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
|-----------------|------|-----|-------|------|------|------|------|------|

EP074H: Naphthalene

| | | | | | | | | |
|-------------|---------|---|-------|----|----|----|----|----|
| Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | <1 | <1 | <1 |
|-------------|---------|---|-------|----|----|----|----|----|

EP074I: Volatile Halogenated Compounds

| | | | | | | | | |
|--|----------|------|-------|-------|-------|-------|-------|-------|
| Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | <0.04 | <0.04 | <0.04 |
| Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| ^ Sum of volatile chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| ^ Sum of other chlorinated hydrocarbons | ---- | 0.01 | mg/kg | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |

EP075A: Phenolic Compounds (Halogenated)

| | | | | | | | | |
|---------------------------|----------|------|-------|-------|-------|-------|-------|-------|
| 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

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| | | | | CPT002_BH55_0.1 | CPT002_BH56_0.1 | CPT002_BH58_0.1 | QC01_310320 | QC05_310320 |
|--|--|--|--|-------------------|-------------------|-------------------|-------------------|-------------------|
| | | | | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 |
| | | | | EM2005382-001 | EM2005382-003 | EM2005382-004 | EM2005382-006 | EM2005382-009 |
| | | | | Result | Result | Result | Result | Result |

EP075A: Phenolic Compounds (Halogenated) - Continued

| | | | | | | | | |
|-------------------------------------|-------------------|------|-------|-------|-------|-------|-------|-------|
| 2.3.4.5 & 2.3.4.6-Tetrachlorophenol | 4901-51-3/58-90-2 | 0.05 | mg/kg | <0.06 | <0.06 | <0.05 | <0.05 | <0.05 |
| Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| ^ Sum of Phenols (halogenated) | ---- | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |

EP075A: Phenolic Compounds (Non-halogenated)

| | | | | | | | | |
|------------------------------------|-----------|---|-------|----|----|----|----|----|
| Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | <1 | <1 | <1 |
| 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | <1 | <1 | <1 |
| 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | <1 | <1 | <1 |
| 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | <1 | <1 | <1 |
| 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | <1 | <1 | <1 |
| 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | <5 | <5 | <5 |
| 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | <5 | <5 | <5 |
| 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | <5 | <5 | <5 |
| Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | <5 | <5 | <5 |
| 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | <5 | <5 | <5 |
| ^ Sum of Phenols (non-halogenated) | ---- | 1 | mg/kg | <1 | <1 | <1 | <1 | <1 |

EP075B: Polynuclear Aromatic Hydrocarbons

| | | | | | | | | |
|---|-------------------|-----|-------|------|------|------|------|------|
| Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2 207-08-9 | 1.0 | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Dibenz(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| ^ Sum of polycyclic aromatic hydrocarbons | ---- | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| ^ Benzo(a)pyrene TEQ (zero) | ---- | 0.5 | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

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| | CPT002_BH55_0.1 | CPT002_BH56_0.1 | CPT002_BH58_0.1 | QC01_310320 | QC05_310320 |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 |
| | EM2005382-001 | EM2005382-003 | EM2005382-004 | EM2005382-006 | EM2005382-009 |
| | Result | Result | Result | Result | Result |

EP075B: Polynuclear Aromatic Hydrocarbons - Continued

| | | | | | | | | |
|---------------------------------|------|-----|-------|-----|-----|-----|-----|-----|
| ^ Benzo(a)pyrene TEQ (half LOR) | ---- | 0.5 | mg/kg | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| ^ Benzo(a)pyrene TEQ (LOR) | ---- | 0.5 | mg/kg | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |

EP075I: Organochlorine Pesticides

| | | | | | | | | |
|--|-------------------------|------|-------|-------|-------|-------|-------|-------|
| alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| ^ Sum of organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| ^ Chlordane | 57-74-9 | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| ^ Sum of other organochlorine pesticides | ---- | 0.03 | mg/kg | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |

EP080/071: Total Petroleum Hydrocarbons

| | | | | | | | | |
|--------------------|--------|-----|-------|------|------|------|------|------|
| C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | <10 | <10 | <10 |
| C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | <50 | <50 | <50 |
| C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | <10 | <10 | <10 |
| C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | <100 | <100 | <100 |
| C29 - C36 Fraction | ---- | 100 | mg/kg | 120 | <100 | <100 | <100 | <100 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

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| | CPT002_BH55_0.1 | CPT002_BH56_0.1 | CPT002_BH58_0.1 | QC01_310320 | QC05_310320 |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|
| | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 |
| | EM2005382-001 | EM2005382-003 | EM2005382-004 | EM2005382-006 | EM2005382-009 |
| | Result | Result | Result | Result | Result |

EP080/071: Total Petroleum Hydrocarbons - Continued

| | | | | | | | | | |
|----------------------------|------|----|-------|-----|-----|-----|-----|-----|-----|
| ^ C10 - C36 Fraction (sum) | ---- | 50 | mg/kg | 120 | <50 | <50 | <50 | <50 | <50 |
|----------------------------|------|----|-------|-----|-----|-----|-----|-----|-----|

EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions

| | | | | | | | | | |
|--|-------------|-----|-------|------|------|------|------|------|------|
| >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | <50 | <50 | <50 | <50 |
| >C16 - C34 Fraction | ---- | 100 | mg/kg | 180 | <100 | <100 | <100 | <100 | <100 |
| >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | <100 | <100 | <100 | <100 |
| ^ >C10 - C40 Fraction (sum) | ---- | 50 | mg/kg | 180 | <50 | <50 | <50 | <50 | <50 |
| >C10 - C16 Fraction minus Naphthalene (F2) | ---- | 50 | mg/kg | <50 | <50 | <50 | <50 | <50 | <50 |
| C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | <10 | <10 | <10 | <10 |

EP231A: Perfluoroalkyl Sulfonic Acids

| | | | | | | | | | |
|--|-----------|--------|-------|---------|---------|---------|---------|---------|---------|
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | 0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |

EP231B: Perfluoroalkyl Carboxylic Acids

| | | | | | | | | | |
|-----------------------------------|-----------|--------|-------|---------|---------|---------|---------|---------|---------|
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |



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Sub-Matrix: SOIL
 (Matrix: SOIL)

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| | | | | CPT002_BH55_0.1 | CPT002_BH56_0.1 | CPT002_BH58_0.1 | QC01_310320 | QC05_310320 |
|--|--|--|--|-------------------|-------------------|-------------------|-------------------|-------------------|
| | | | | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 |
| | | | | EM2005382-001 | EM2005382-003 | EM2005382-004 | EM2005382-006 | EM2005382-009 |
| | | | | Result | Result | Result | Result | Result |

EP231B: Perfluoroalkyl Carboxylic Acids - Continued

| | | | | | | | | |
|--------------------------------------|------------|--------|-------|---------|---------|---------|---------|---------|
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |

EP231C: Perfluoroalkyl Sulfonamides

| | | | | | | | | |
|---|------------|--------|-------|---------|---------|---------|---------|---------|
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |

EP231D: (n:2) Fluorotelomer Sulfonic Acids

| | | | | | | | | |
|---|-------------|--------|-------|---------|---------|---------|---------|---------|
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 |

EP231P: PFAS Sums

| | | | | | | | | |
|---------------------------|--------------------|--------|-------|--------|---------|---------|---------|---------|
| Sum of PFAS | ---- | 0.0002 | mg/kg | 0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.0002 | mg/kg | 0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Sum of PFAS (WA DER List) | ---- | 0.0002 | mg/kg | 0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |

EP066S: PCB Surrogate



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Sub-Matrix: SOIL
 (Matrix: SOIL)

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| | | | | CPT002_BH55_0.1 | CPT002_BH56_0.1 | CPT002_BH58_0.1 | QC01_310320 | QC05_310320 |
|---|------------|--------|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| | | | | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 |
| | | | | EM2005382-001 | EM2005382-003 | EM2005382-004 | EM2005382-006 | EM2005382-009 |
| | | | | Result | Result | Result | Result | Result |
| EP066S: PCB Surrogate - Continued | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | 0.1 | % | 87.2 | 110 | 96.8 | 116 | 106 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 0.1 | % | 77.1 | 90.9 | 85.2 | 85.5 | 82.2 |
| Toluene-D8 | 2037-26-5 | 0.1 | % | 75.2 | 89.6 | 81.6 | 86.1 | 77.2 |
| 4-Bromofluorobenzene | 460-00-4 | 0.1 | % | 81.7 | 95.7 | 87.1 | 88.9 | 84.5 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | | | | | | |
| Phenol-d6 | 13127-88-3 | 0.025 | % | 97.8 | 111 | 110 | 110 | 115 |
| 2-Chlorophenol-D4 | 93951-73-6 | 0.025 | % | 90.8 | 104 | 97.6 | 107 | 103 |
| 2,4,6-Tribromophenol | 118-79-6 | 0.025 | % | 91.2 | 99.8 | 90.6 | 107 | 97.3 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | | | | | | |
| Nitrobenzene-D5 | 4165-60-0 | 0.025 | % | 108 | 108 | 102 | 110 | 108 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 0.025 | % | 93.2 | 98.3 | 88.8 | 96.2 | 95.6 |
| 2-Fluorobiphenyl | 321-60-8 | 0.025 | % | 96.4 | 97.9 | 91.1 | 104 | 97.5 |
| Anthracene-d10 | 1719-06-8 | 0.025 | % | 94.2 | 98.5 | 89.2 | 104 | 95.9 |
| 4-Terphenyl-d14 | 1718-51-0 | 0.025 | % | 101 | 106 | 97.2 | 113 | 104 |
| EP231S: PFAS Surrogate | | | | | | | | |
| 13C4-PFOS | ---- | 0.0002 | % | 97.0 | 91.5 | 114 | 102 | 95.5 |
| 13C8-PFOA | ---- | 0.0002 | % | 87.5 | 80.5 | 93.5 | 83.0 | 84.0 |



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Sub-Matrix: WATER
 (Matrix: WATER)

| | | | | QC03_310320 | QC04_310320 | ---- | ---- | ---- |
|---|----------------------|--------|------|-------------------|-------------------|-------|-------|-------|
| | | | | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | ---- | ---- | ---- |
| | | | | EM2005382-007 | EM2005382-008 | ----- | ----- | ----- |
| | | | | Result | Result | ---- | ---- | ---- |
| EG020T: Total Metals by ICP-MS | | | | | | | | |
| Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | ---- | ---- | ---- |
| Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | <0.001 | ---- | ---- | ---- |
| Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | <0.001 | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | <0.001 | ---- | ---- | ---- |
| Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | <0.005 | ---- | ---- | ---- |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | ---- | ---- | ---- |
| EP068A: Organochlorine Pesticides (OC) | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| alpha-Endosulfan | 959-98-8 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| beta-Endosulfan | 33213-65-9 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| 4,4'-DDT | 50-29-3 | 2.0 | µg/L | <2.0 | <2.0 | ---- | ---- | ---- |
| Endrin ketone | 53494-70-5 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Methoxychlor | 72-43-5 | 2.0 | µg/L | <2.0 | <2.0 | ---- | ---- | ---- |
| ^ Total Chlordane (sum) | ---- | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |



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Sub-Matrix: WATER
 (Matrix: WATER)

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| | | | | QC03_310320 | QC04_310320 | ---- | ---- | ---- |
|--|--|--|--|-------------------|-------------------|-------|-------|-------|
| | | | | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | ---- | ---- | ---- |
| | | | | EM2005382-007 | EM2005382-008 | ----- | ----- | ----- |
| | | | | Result | Result | ---- | ---- | ---- |

EP068A: Organochlorine Pesticides (OC) - Continued

EP068B: Organophosphorus Pesticides (OP)

| | | | | | | | | |
|---------------------|------------|-----|------|------|------|------|------|------|
| Dichlorvos | 62-73-7 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Demeton-S-methyl | 919-86-8 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Monocrotophos | 6923-22-4 | 2.0 | µg/L | <2.0 | <2.0 | ---- | ---- | ---- |
| Dimethoate | 60-51-5 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Diazinon | 333-41-5 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Chlorpyrifos-methyl | 5598-13-0 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Parathion-methyl | 298-00-0 | 2.0 | µg/L | <2.0 | <2.0 | ---- | ---- | ---- |
| Malathion | 121-75-5 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Fenthion | 55-38-9 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Chlorpyrifos | 2921-88-2 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Parathion | 56-38-2 | 2.0 | µg/L | <2.0 | <2.0 | ---- | ---- | ---- |
| Pirimphos-ethyl | 23505-41-1 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Chlorfenvinphos | 470-90-6 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Bromophos-ethyl | 4824-78-6 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Fenamiphos | 22224-92-6 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Prothiofos | 34643-46-4 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Ethion | 563-12-2 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Carbophenothion | 786-19-6 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |
| Azinphos Methyl | 86-50-0 | 0.5 | µg/L | <0.5 | <0.5 | ---- | ---- | ---- |

EP080/071: Total Petroleum Hydrocarbons

| | | | | | | | | |
|----------------------------|------|-----|------|------|------|------|------|------|
| C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | ---- | ---- | ---- |
| C10 - C14 Fraction | ---- | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |
| C15 - C28 Fraction | ---- | 100 | µg/L | <100 | <100 | ---- | ---- | ---- |
| C29 - C36 Fraction | ---- | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |
| ^ C10 - C36 Fraction (sum) | ---- | 50 | µg/L | <50 | <50 | ---- | ---- | ---- |

EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions

| | | | | | | | | |
|-------------------------------------|-------------|-----|------|------|------|------|------|------|
| C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | ---- | ---- | ---- |
| ^ C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 20 | µg/L | <20 | <20 | ---- | ---- | ---- |
| >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | <100 | ---- | ---- | ---- |
| >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | <100 | ---- | ---- | ---- |
| >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | <100 | ---- | ---- | ---- |
| ^ >C10 - C40 Fraction (sum) | ---- | 100 | µg/L | <100 | <100 | ---- | ---- | ---- |



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Sub-Matrix: WATER
 (Matrix: WATER)

| | | | | QC03_310320 | QC04_310320 | ---- | ---- | ---- |
|--|--|--|--|-------------------|-------------------|-------|-------|-------|
| | | | | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | ---- | ---- | ---- |
| | | | | EM2005382-007 | EM2005382-008 | ----- | ----- | ----- |
| | | | | Result | Result | ---- | ---- | ---- |

EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued

| | | | | | | | | | | |
|--|--|--|--|-----|------|------|------|------|------|------|
| ^ >C10 - C16 Fraction minus Naphthalene (F2) | | | | 100 | µg/L | <100 | <100 | ---- | ---- | ---- |
|--|--|--|--|-----|------|------|------|------|------|------|

EP080: BTEXN

| | | | | | | | | |
|---------------------|-------------------|---|------|----|----|------|------|------|
| Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | ---- | ---- | ---- |
| Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | ---- | ---- | ---- |
| meta- & para-Xylene | 108-38-3 106-42-3 | 2 | µg/L | <2 | <2 | ---- | ---- | ---- |
| ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | ---- | ---- | ---- |
| ^ Total Xylenes | | 2 | µg/L | <2 | <2 | ---- | ---- | ---- |
| ^ Sum of BTEX | | 1 | µg/L | <1 | <1 | ---- | ---- | ---- |
| Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | ---- | ---- | ---- |

EP231A: Perfluoroalkyl Sulfonic Acids

| | | | | | | | | |
|--|-----------|------|------|-------|-------|------|------|------|
| Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | ---- | ---- | ---- |
| Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |

EP231B: Perfluoroalkyl Carboxylic Acids

| | | | | | | | | |
|-----------------------------------|-----------|------|------|-------|-------|------|------|------|
| Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | <0.1 | ---- | ---- | ---- |
| Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | <0.01 | ---- | ---- | ---- |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |



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Sub-Matrix: WATER
 (Matrix: WATER)

| | | | | QC03_310320 | QC04_310320 | ---- | ---- | ---- |
|--|--------------------|------|------|-------------------|-------------------|-------|-------|-------|
| | | | | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | ---- | ---- | ---- |
| | | | | EM2005382-007 | EM2005382-008 | ----- | ----- | ----- |
| | | | | Result | Result | ---- | ---- | ---- |
| EP231B: Perfluoroalkyl Carboxylic Acids - Continued | | | | | | | | |
| Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | <0.05 | ---- | ---- | ---- |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | <0.05 | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | <0.05 | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | <0.05 | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | <0.05 | ---- | ---- | ---- |
| N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | <0.02 | ---- | ---- | ---- |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | |
| 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | <0.05 | ---- | ---- | ---- |
| 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | <0.05 | ---- | ---- | ---- |
| 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | <0.05 | ---- | ---- | ---- |
| 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | <0.05 | ---- | ---- | ---- |
| EP231P: PFAS Sums | | | | | | | | |
| Sum of PFAS | ---- | 0.01 | µg/L | <0.01 | <0.01 | ---- | ---- | ---- |
| Sum of PFHxS and PFOS | 355-46-4/1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | ---- | ---- | ---- |



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Sub-Matrix: **WATER**
 (Matrix: **WATER**)

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| | | | | QC03_310320 | QC04_310320 | ---- | ---- | ---- |
|---|------------|------|------|-------------------|-------------------|-------|-------|-------|
| | | | | 31-Mar-2020 00:00 | 31-Mar-2020 00:00 | ---- | ---- | ---- |
| | | | | EM2005382-007 | EM2005382-008 | ----- | ----- | ----- |
| | | | | Result | Result | ---- | ---- | ---- |
| EP231P: PFAS Sums - Continued | | | | | | | | |
| Sum of PFAS (WA DER List) | ---- | 0.01 | µg/L | <0.01 | <0.01 | ---- | ---- | ---- |
| EP068S: Organochlorine Pesticide Surrogate | | | | | | | | |
| Dibromo-DDE | 21655-73-2 | 0.5 | % | 82.3 | 81.6 | ---- | ---- | ---- |
| EP068T: Organophosphorus Pesticide Surrogate | | | | | | | | |
| DEF | 78-48-8 | 0.5 | % | 98.7 | 93.5 | ---- | ---- | ---- |
| EP080S: TPH(V)/BTEX Surrogates | | | | | | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 2 | % | 93.7 | 97.7 | ---- | ---- | ---- |
| Toluene-D8 | 2037-26-5 | 2 | % | 99.6 | 98.0 | ---- | ---- | ---- |
| 4-Bromofluorobenzene | 460-00-4 | 2 | % | 89.7 | 85.6 | ---- | ---- | ---- |
| EP231S: PFAS Surrogate | | | | | | | | |
| 13C4-PFOS | ---- | 0.02 | % | 72.6 | 77.7 | ---- | ---- | ---- |
| 13C8-PFOA | ---- | 0.02 | % | 96.3 | 105 | ---- | ---- | ---- |



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| Sub-Matrix: SOIL | | □□□□ □□□□ s □ | |
|---|------------|---------------|------|
| □□ □□□□ | □□ □□□□ | □□% | □□ □ |
| EP066S: PCB Surrogate | | | |
| Decachlorobiphenyl | 2051-24-3 | 41 | 122 |
| EP074S: VOC Surrogates (Ultra-Trace) | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 59 | 119 |
| Toluene-D8 | 2037-26-5 | 55 | 117 |
| 4-Bromofluorobenzene | 460-00-4 | 59 | 123 |
| EP075S: Acid Extractable Surrogates (Waste Classification) | | | |
| Phenol-d6 | 13127-88-3 | 28 | 134 |
| 2-Chlorophenol-D4 | 93951-73-6 | 27 | 123 |
| 2,4,6-Tribromophenol | 118-79-6 | 25 | 149 |
| EP075T: Base/Neutral Extractable Surrogates (Waste Classification) | | | |
| Nitrobenzene-D5 | 4165-60-0 | 29 | 125 |
| 1,2-Dichlorobenzene-D4 | 2199-69-1 | 31 | 117 |
| 2-Fluorobiphenyl | 321-60-8 | 44 | 136 |
| Anthracene-d10 | 1719-06-8 | 53 | 133 |
| 4-Terphenyl-d14 | 1718-51-0 | 59 | 141 |
| EP231S: PFAS Surrogate | | | |
| 13C4-PFOS | ---- | 60 | 120 |
| 13C8-PFOA | ---- | 60 | 120 |

| Sub-Matrix: WATER | | □□□□ □□□□ s □ | |
|---|------------|---------------|------|
| □□ □□□□ | □□ □□□□ | □□% | □□ □ |
| EP068S: Organochlorine Pesticide Surrogate | | | |
| Dibromo-DDE | 21655-73-2 | 49 | 117 |
| EP068T: Organophosphorus Pesticide Surrogate | | | |
| DEF | 78-48-8 | 51 | 127 |
| EP080S: TPH(V)/BTEX Surrogates | | | |
| 1,2-Dichloroethane-D4 | 17060-07-0 | 73 | 129 |
| Toluene-D8 | 2037-26-5 | 70 | 125 |
| 4-Bromofluorobenzene | 460-00-4 | 71 | 129 |
| EP231S: PFAS Surrogate | | | |
| 13C4-PFOS | ---- | 60 | 120 |
| 13C8-PFOA | ---- | 60 | 120 |

Automated Guideline Comparison Report

EPA Victoria Publication IWRG 621 (2009) - Table 2: Soil Hazard Categorisation

| | | | |
|-------------------------|--|---------------|--|
| Work Order | : EM2005382 | Page | : 1 of 8 |
| Amendment | : 1 | | |
| Client | : AECOM Australia Pty Ltd | Laboratory | : Environmental Division Melbourne |
| Contact | : [REDACTED] | | |
| Address | : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004 | Address | : 4 Westall Rd Springvale VIC Australia 3171 |
| E-mail | : [REDACTED] | E-mail | : [REDACTED]@alsglobal.com |
| Telephone | : ---- | Telephone | : +6138549 9645 |
| Facsimile | : ---- | Facsimile | : +61-3-8549 9626 |
| Project | : 60592634 | Date Received | : 31-Mar-2020 13:20 |
| Order number | : 60592634 1.0 | Date Analysed | : 01-Apr-2020 |
| C-O-C number | : ---- | Date Issued | : 08-Apr-2020 16:42 |
| No. of samples received | : 9 | | |
| No. of samples analysed | : 7 | Quote number | : EN/004/16 |

General Comments

This guideline comparison report **only** provides comparison of total concentration data against upper limit thresholds for the 'Fill Material', 'C', 'B' Categories in Table 2 of EPA Publication IWRG621.

This guideline comparison report is **NOT** a soil classification report. Classification of soils as Fill Material, Category C, Category B or Category A requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations, as set out in EPA Publication IWRG 702 and measurement uncertainty.

This guideline comparison report only provides comparison data for parameters, specifically listed within the IWRG621 (2009) guideline, that are analysed by ALS.

Only results in the 'Analytical Results' section have been compared to the guideline.

Additional information pertinent to this report will be found in the following separate attachments: Certificate of Analysis, Quality Control Report, QA/QC Compliance Assessment to Assist with Quality Review and Sample Receipt Notification.



Summary of Thresholds Reached or Exceeded

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| Client Sample ID | ALS Sample ID | Compound | Method | LOR | Limits | Result |
|------------------|---------------|---------------------------------|----------|-----|------------|-----------|
| CPT002_BH55_0.1 | EM2005382-001 | Total Polychlorinated biphenyls | EP066-EM | 0.1 | < 2 mg/kg | 5.9 mg/kg |
| CPT002_BH56_0.1 | EM2005382-003 | Arsenic | EG005T | 5 | < 20 mg/kg | 28 mg/kg |



Analytical Results

Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| Sub-Matrix: SOIL | | | | Client sample ID | | CPT002_BH55
_0.1 | CPT002_BH56
_0.1 | CPT002_BH58
_0.1 | QC01_310320 | QC05_310320 | |
|--|--------------|------|---------|------------------|--------|---------------------|---------------------|---------------------|-------------|-------------|--------------------|
| | | | | | | | | | | | Sampling date/time |
| | | | | Compound | Method | | | | | | LOR |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 2 | 12.5 | 7.5 ± 0.2 | 7.1 ± 0.2 | 6.2 ± 0.1 | 6.2 ± 0.1 | 5.6 ± 0.1 | |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 2000 | 17 ± 3 | 28 ± 4 | 9 ± 2 | 11 ± 2 | <5 -- | |
| Cadmium | EG005T | 1 | mg/kg | ---- | 400 | <1 -- | <1 -- | <1 -- | <1 -- | <1 -- | |
| Copper | EG005T | 5 | mg/kg | ---- | 20000 | 37 ± 4 | 23 ± 3 | 8 ± 1 | <5 -- | <5 -- | |
| Lead | EG005T | 5 | mg/kg | ---- | 6000 | 56 ± 6 | 8 ± 1 | 11 ± 1 | 12 ± 2 | <5 -- | |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 4000 | <2 -- | <2 -- | <2 -- | <2 -- | <2 -- | |
| Nickel | EG005T | 2 | mg/kg | ---- | 12000 | 9 ± 1.0 | 21 ± 2 | 10 ± 1.0 | 10 ± 1 | <2 -- | |
| Selenium | EG005T | 5 | mg/kg | ---- | 200 | <5 -- | <5 -- | <5 -- | <5 -- | <5 -- | |
| Silver | EG005T | 2 | mg/kg | ---- | 720 | <2 -- | <2 -- | <2 -- | <2 -- | <2 -- | |
| Zinc | EG005T | 5 | mg/kg | ---- | 140000 | 146 ± 16 | 21 ± 3 | 18 ± 3 | <5 -- | <5 -- | |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 300 | 0.1 ± 0.01 | <0.1 -- | <0.1 -- | <0.1 -- | <0.1 -- | |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 2000 | <0.5 -- | <0.5 -- | <0.5 -- | <0.5 -- | <0.5 -- | |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 10000 | <1 -- | <1 -- | <1 -- | <1 -- | <1 -- | |
| EK040T: Fluoride Total | | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 40000 | 240 ± 50 | 250 ± 50 | 240 ± 50 | 290 ± 50 | <40 -- | |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 16 | <0.2 -- | <0.2 -- | <0.2 -- | <0.2 -- | <0.2 -- | |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 240 | <0.2 -- | <0.2 -- | <0.2 -- | <0.2 -- | <0.2 -- | |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 4.8 | <0.02 -- | <0.02 -- | <0.02 -- | <0.02 -- | <0.02 -- | |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 11 | <0.02 -- | <0.02 -- | <0.02 -- | <0.02 -- | <0.02 -- | |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 50 | <0.01 -- | <0.01 -- | <0.01 -- | <0.01 -- | <0.01 -- | |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 320 | <0.03 -- | <0.03 -- | <0.03 -- | <0.03 -- | <0.03 -- | |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 2200 | <1 -- | <1 -- | <1 -- | <1 -- | <1 -- | |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category B: Table 2: Soil Hazard Categorisation Thresholds : Category B

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT002_BH55
_0.1 | CPT002_BH56
_0.1 | CPT002_BH58
_0.1 | QC01_310320 | QC05_310320 |
|--|--------------|------|-------|------------------|-------|------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Sampling date/time | | | | | | | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 |
| Compound | | | | Method | LOR | Unit | EM2005382-001 MU | EM2005382-003 MU | EM2005382-004 MU | EM2005382-006 MU | EM2005382-009 MU |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 20 | | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 400 | | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 4.8 | | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4.8 | | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | | <0.05 .. | <0.05 .. | <0.05 .. | <0.05 .. | <0.05 .. |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 16 | | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 50 | | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 2600 | | <10 .. | <10 .. | <10 .. | <10 .. | <10 .. |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 40000 | | 120 ± 20 | <50 .. | <50 .. | <50 .. | <50 .. |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

| | | | | Client sample ID | | CPT002_BH55_0.1 | CPT002_BH56_0.1 | CPT002_BH58_0.1 | QC01_310320 | QC05_310320 |
|---|--------------|------|---------|------------------|-------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Sampling date/time | | | | □ □ □ □ □ □ | □ □ □ □ □ □ | 31-Mar-2020 15:00 | 31-Mar-2020 15:00 | 31-Mar-2020 15:00 | 31-Mar-2020 15:00 | 31-Mar-2020 15:00 |
| Compound | | | | □ □ □ □ □ □ | □ □ □ □ □ □ | EM2005382-001 MU | EM2005382-003 MU | EM2005382-004 MU | EM2005382-006 MU | EM2005382-009 MU |
| Method | | | | □ □ □ □ □ □ | □ □ □ □ □ □ | | | | | |
| LOR | | | | | | | | | | |
| Unit | | | | | | | | | | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 7.5 ± 0.2 | 7.1 ± 0.2 | 6.2 ± 0.1 | 6.2 ± 0.1 | 5.6 ± 0.1 |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 500 | 17 ± 3 | 28 ± 4 | 9 ± 2 | 11 ± 2 | <5 .. |
| Cadmium | EG005T | 1 | mg/kg | ---- | 100 | <1 .. | <1 .. | <1 .. | <1 .. | <1 .. |
| Copper | EG005T | 5 | mg/kg | ---- | 5000 | 37 ± 4 | 23 ± 3 | 8 ± 1 | <5 .. | <5 .. |
| Lead | EG005T | 5 | mg/kg | ---- | 1500 | 56 ± 6 | 8 ± 1 | 11 ± 1 | 12 ± 2 | <5 .. |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 1000 | <2 .. | <2 .. | <2 .. | <2 .. | <2 .. |
| Nickel | EG005T | 2 | mg/kg | ---- | 3000 | 9 ± 1.0 | 21 ± 2 | 10 ± 1.0 | 10 ± 1 | <2 .. |
| Selenium | EG005T | 5 | mg/kg | ---- | 50 | <5 .. | <5 .. | <5 .. | <5 .. | <5 .. |
| Silver | EG005T | 2 | mg/kg | ---- | 180 | <2 .. | <2 .. | <2 .. | <2 .. | <2 .. |
| Tin | EG005T | 5 | mg/kg | ---- | 500 | <5 .. | <5 .. | <5 .. | <5 .. | <5 .. |
| Zinc | EG005T | 5 | mg/kg | ---- | 35000 | 146 ± 16 | 21 ± 3 | 18 ± 3 | <5 .. | <5 .. |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 75 | 0.1 ± 0.01 | <0.1 .. | <0.1 .. | <0.1 .. | <0.1 .. |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 500 | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 2500 | <1 .. | <1 .. | <1 .. | <1 .. | <1 .. |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 10000 | 240 ± 50 | 250 ± 50 | 240 ± 50 | 290 ± 50 | <40 .. |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 4 | <0.2 .. | <0.2 .. | <0.2 .. | <0.2 .. | <0.2 .. |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 70 | <0.2 .. | <0.2 .. | <0.2 .. | <0.2 .. | <0.2 .. |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Vinyl chloride | EP074-UT | 0.02 | mg/kg | ---- | 1.2 | <0.02 .. | <0.02 .. | <0.02 .. | <0.02 .. | <0.02 .. |
| Hexachlorobutadiene | EP074-UT | 0.02 | mg/kg | ---- | 2.8 | <0.02 .. | <0.02 .. | <0.02 .. | <0.02 .. | <0.02 .. |
| Sum of other chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 10 | <0.01 .. | <0.01 .. | <0.01 .. | <0.01 .. | <0.01 .. |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 560 | <1 .. | <1 .. | <1 .. | <1 .. | <1 .. |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Category C: Table 2: Soil Hazard Categorisation Thresholds : Category C

Sub-Matrix: SOIL

| | | | | Client sample ID | | | CPT002_BH55
_0.1 | CPT002_BH56
_0.1 | CPT002_BH58
_0.1 | QC01_310320 | QC05_310320 |
|--|--------------|------|-------|------------------|-------|-----------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Sampling date/time | | | | | | | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 |
| Compound | Method | LOR | Unit | | | | EM2005382-001 MU | EM2005382-003 MU | EM2005382-004 MU | EM2005382-006 MU | EM2005382-009 MU |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 5 | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 100 | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | |
| Heptachlor | EP075-EM | 0.03 | mg/kg | ---- | 1.2 | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. |
| Sum of Aldrin + Dieldrin | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1.2 | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. |
| Sum of DDD + DDE + DDT | EP075-EM-SUM | 0.05 | mg/kg | ---- | 50 | <0.05 .. | <0.05 .. | <0.05 .. | <0.05 .. | <0.05 .. | <0.05 .. |
| Chlordane | EP075-EM-SUM | 0.03 | mg/kg | ---- | 4 | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. |
| Sum of other organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 10 | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 650 | <10 .. | <10 .. | <10 .. | <10 .. | <10 .. | <10 .. |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 10000 | 120 ± 20 | <50 .. | <50 .. | <50 .. | <50 .. | <50 .. |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| | | | | Client sample ID | | CPT002_BH55
_0.1 | CPT002_BH56
_0.1 | CPT002_BH58
_0.1 | QC01_310320 | QC05_310320 |
|---|--------------|------|---------|------------------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Sampling date/time | | | | □□□□ □□ | □□□□ □□ | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 |
| Compound | Method | LOR | Unit | □□□□
□□ □ | □□□□
□□ □ | EM2005382-001 MU | EM2005382-003 MU | EM2005382-004 MU | EM2005382-006 MU | EM2005382-009 MU |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | | | |
| pH (CaCl2) | EA001 | 0.1 | pH Unit | 4 | 9 | 7.5 ± 0.2 | 7.1 ± 0.2 | 6.2 ± 0.1 | 6.2 ± 0.1 | 5.6 ± 0.1 |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | | | |
| Arsenic | EG005T | 5 | mg/kg | ---- | 20 | 17 ± 3 | 28 ± 4 | 9 ± 2 | 11 ± 2 | <5 .. |
| Cadmium | EG005T | 1 | mg/kg | ---- | 3 | <1 .. | <1 .. | <1 .. | <1 .. | <1 .. |
| Copper | EG005T | 5 | mg/kg | ---- | 100 | 37 ± 4 | 23 ± 3 | 8 ± 1 | <5 .. | <5 .. |
| Lead | EG005T | 5 | mg/kg | ---- | 300 | 56 ± 6 | 8 ± 1 | 11 ± 1 | 12 ± 2 | <5 .. |
| Molybdenum | EG005T | 2 | mg/kg | ---- | 40 | <2 .. | <2 .. | <2 .. | <2 .. | <2 .. |
| Nickel | EG005T | 2 | mg/kg | ---- | 60 | 9 ± 1.0 | 21 ± 2 | 10 ± 1.0 | 10 ± 1 | <2 .. |
| Selenium | EG005T | 5 | mg/kg | ---- | 10 | <5 .. | <5 .. | <5 .. | <5 .. | <5 .. |
| Silver | EG005T | 2 | mg/kg | ---- | 10 | <2 .. | <2 .. | <2 .. | <2 .. | <2 .. |
| Tin | EG005T | 5 | mg/kg | ---- | 50 | <5 .. | <5 .. | <5 .. | <5 .. | <5 .. |
| Zinc | EG005T | 5 | mg/kg | ---- | 200 | 146 ± 16 | 21 ± 3 | 18 ± 3 | <5 .. | <5 .. |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | | | |
| Mercury | EG035T | 0.1 | mg/kg | ---- | 1 | 0.1 ± 0.01 | <0.1 .. | <0.1 .. | <0.1 .. | <0.1 .. |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | | | |
| Hexavalent Chromium | EG048G | 0.5 | mg/kg | ---- | 1 | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | | | |
| Total Cyanide | EK026SF | 1 | mg/kg | ---- | 50 | <1 .. | <1 .. | <1 .. | <1 .. | <1 .. |
| EK040T: Fluoride Total | | | | | | | | | | |
| Fluoride | EK040T | 40 | mg/kg | ---- | 450 | 240 ± 50 | 250 ± 50 | 240 ± 50 | 290 ± 50 | <40 .. |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| Total Polychlorinated biphenyls | EP066-EM | 0.1 | mg/kg | ---- | 2 | 5.9 ± 1.7 | <0.1 .. | <0.1 .. | <0.1 .. | <0.1 .. |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Benzene | EP074-UT | 0.2 | mg/kg | ---- | 1 | <0.2 .. | <0.2 .. | <0.2 .. | <0.2 .. | <0.2 .. |
| Sum of monocyclic aromatic hydrocarbons | EP074-UT-SUM | 0.2 | mg/kg | ---- | 7 | <0.2 .. | <0.2 .. | <0.2 .. | <0.2 .. | <0.2 .. |
| EP074I: Volatile Halogenated Compounds | | | | | | | | | | |
| Sum of volatile chlorinated hydrocarbons | EP074-UT-SUM | 0.01 | mg/kg | ---- | 1 | <0.01 .. | <0.01 .. | <0.01 .. | <0.01 .. | <0.01 .. |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | | | |
| Sum of Phenols (halogenated) | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | | | |
| Sum of Phenols (non-halogenated) | EP075-EM-SUM | 1 | mg/kg | ---- | 60 | <1 .. | <1 .. | <1 .. | <1 .. | <1 .. |



Soil Hazard Categorisation and Management

Table 2: Soil Hazard Categorisation Thresholds : Fill Material: Table 2: Soil Hazard Categorisation Thresholds : Fill Material

| Sub-Matrix: SOIL | | | | Client sample ID | | □□□□ □□ | □□□□ □□ | CPT002_BH55
_0.1 | CPT002_BH56
_0.1 | CPT002_BH58
_0.1 | QC01_310320 | QC05_310320 |
|---|--------------|------|-------|--------------------|------------------|------------------|------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | | | | Sampling date/time | | | | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 | 31-Mar-2020
15:00 |
| Compound | Method | LOR | Unit | □□ □□
□□ □□ | □□□□ □□
□□ □□ | EM2005382-001 MU | EM2005382-003 MU | EM2005382-004 MU | EM2005382-006 MU | EM2005382-009 MU | | |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | | | | | |
| Benzo(a)pyrene | EP075-EM | 0.5 | mg/kg | ---- | 1 | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. | | |
| Sum of polycyclic aromatic hydrocarbons | EP075-EM-SUM | 0.5 | mg/kg | ---- | 20 | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. | <0.5 .. | | |
| EP075I: Organochlorine Pesticides | | | | | | | | | | | | |
| Sum of organochlorine pesticides | EP075-EM-SUM | 0.03 | mg/kg | ---- | 1 | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | <0.03 .. | | |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | | | | | |
| C6 - C9 Fraction | EP074-UT | 10 | mg/kg | ---- | 100 | <10 .. | <10 .. | <10 .. | <10 .. | <10 .. | | |
| C10 - C36 Fraction (sum) | EP071-EM | 50 | mg/kg | ---- | 1000 | 120 ± 20 | <50 .. | <50 .. | <50 .. | <50 .. | | |



Environmental

QUALITY CONTROL REPORT

Work Order : **EM2005382**

Page : 1 of 25

Amendment : **1**

Client : **AECOM Australia Pty Ltd**

Laboratory : Environmental Division Melbourne

Contact : [REDACTED]

Contact : [REDACTED]

Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET
MELBOURNE VIC, AUSTRALIA 3004

Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : ----

Telephone : +6138549 9645

Project : 60592634

Date Samples Received : 31-Mar-2020

Order number : 60592634 1.0

Date Analysis Commenced : 01-Apr-2020

C-O-C number : ----

Issue Date : 08-Apr-2020

Sampler : [REDACTED]

Site : GIJPP

Quote number : EN/004/16

No. of samples received : 9

No. of samples analysed : 7



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

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□ □ □ □ □ □ □ □ □ □ □ □

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Senior Inorganic Chemist
LCMS Coordinator
2IC Organic Chemist
Senior Organic Chemist

Melbourne Inorganics, Springvale, VIC
Sydney Organics, Smithfield, NSW
Melbourne Organics, Springvale, VIC
Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|--------------------|------------|-----------------------------------|---------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2953212) | | | | | | | | | |
| EM2005352-008 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Chromium | 7440-47-3 | 2 | mg/kg | 121 | 119 | 1.91 | 0% - 20% |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 380 | 371 | 2.29 | 0% - 20% |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 29 | 27 | 5.42 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | 77 | 69 | 10.6 | 0% - 50% |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | 9 | 8 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 92 | 82 | 11.0 | 0% - 50% |
| EM2005412-002 | Anonymous | EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EG005T: Chromium | 7440-47-3 | 2 | mg/kg | 20 | 26 | 23.0 | 0% - 50% |
| | | EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Nickel | 7440-02-0 | 2 | mg/kg | 12 | 12 | 0.00 | No Limit |
| | | EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | <2 | 0.00 | No Limit |
| | | EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | 9 | 8 | 0.00 | No Limit |
| | | EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 8 | 48.4 | No Limit |
| | | EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EG005T: Zinc | 7440-66-6 | 5 | mg/kg | 32 | 30 | 4.56 | No Limit |
| EA001: pH in soil using 0.01M CaCl extract (QC Lot: 2954984) | | | | | | | | | |
| EM2005263-007 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 6.4 | 6.3 | 2.35 | 0% - 20% |
| EM2005415-002 | Anonymous | EA001: pH (CaCl2) | ---- | 0.1 | pH Unit | 7.8 | 7.8 | 0.00 | 0% - 20% |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2953307) | | | | | | | | | |
| EM2005352-011 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 33.3 | 34.9 | 4.52 | 0% - 20% |
| EM2005401-013 | Anonymous | EA055: Moisture Content | ---- | 0.1 | % | 15.3 | 15.7 | 2.80 | 0% - 20% |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2953211) | | | | | | | | | |
| EM2004001-006 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM2005263-007 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | 0.1 | <0.1 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2953241) | | | | | | | | | |
| EM2004001-006 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM2005316-002 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2953242) | | | | | | | | | |
| EM2005415-002 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM2005415-007 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2953854) | | | | | | | | | |
| EM2005247-001 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM2005247-010 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 2953855) | | | | | | | | | |
| EM2005382-004 | CPT002_BH58_0.1 | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM2005476-002 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | 1 | 1 | 0.00 | No Limit |
| EK040T: Fluoride Total (QC Lot: 2953253) | | | | | | | | | |
| EM2005316-002 | Anonymous | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 160 | 140 | 16.8 | No Limit |
| EM2005382-004 | CPT002_BH58_0.1 | EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | 240 | 250 | 4.08 | No Limit |
| EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2953091) | | | | | | | | | |
| EM2005482-017 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EM2005316-002 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | <0.1 | 0.00 | No Limit |
| EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2950265) | | | | | | | | | |
| EM2005316-002 | Anonymous | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| EM2005382-006 | QC01_310320 | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---------------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074H: Naphthalene (QC Lot: 2950265) | | | | | | | | | |
| EM2005316-002 | Anonymous | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EM2005382-006 | QC01_310320 | EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2950265) | | | | | | | | | |
| EM2005316-002 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| | | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| EM2005382-006 | QC01_310320 | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | <0.04 | 0.00 | No Limit |
| | | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | <0.01 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|----------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP074I: Volatile Halogenated Compounds (QC Lot: 2950265) - continued | | | | | | | | | |
| EM2005382-006 | QC01_310320 | EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | <0.4 | 0.00 | No Limit |
| EP075A: Phenolic Compounds (Halogenated) (QC Lot: 2953089) | | | | | | | | | |
| EM2005482-017 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | 0-2 | | | | | | | |
| EM2005316-002 | Anonymous | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/58-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM2005482-017 | Anonymous | 0-2 | | | | | | | |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | <0.2 | 0.00 | No Limit |
| | | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM2005316-002 | Anonymous | EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | <1 | 0.00 | No Limit |
| | | EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EM2005482-017 | Anonymous | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|---|----------------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 2953089) - continued | | | | | | | | | |
| EM2005316-002 | Anonymous | EP075-EM: 2-Methyl-4.6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| | | EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | <5 | 0.00 | No Limit |
| EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2953089) | | | | | | | | | |
| EM2005482-017 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 0.6 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenzo(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 1 | mg/kg | <1.0 | <1.0 | 0.00 | No Limit |
| EM2005316-002 | Anonymous | EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Indeno(1.2.3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Dibenzo(a.h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(g.h.i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 1 | mg/kg | <1.0 | <1.0 | 0.00 | No Limit |
| EP075I: Organochlorine Pesticides (QC Lot: 2953089) | | | | | | | | | |
| EM2005482-017 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|-----------------------------------|------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP075I: Organochlorine Pesticides (QC Lot: 2953089) - continued | | | | | | | | | |
| EM2005482-017 | Anonymous | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EM2005316-002 | Anonymous | EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | <0.03 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP075-EM: 4.4`-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | <0.05 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2950265) | | | | | | | | | |
| EM2005316-002 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM2005382-006 | QC01_310320 | EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|-------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2953090) | | | | | | | | | |
| EM2005316-002 | Anonymous | EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2950265) | | | | | | | | | |
| EM2005316-002 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EM2005382-006 | QC01_310320 | EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| | | EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTEX | 10 | mg/kg | <10 | <10 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2953090) | | | | | | | | | |
| EM2005316-002 | Anonymous | EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | <100 | 0.00 | No Limit |
| | | EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | <50 | 0.00 | No Limit |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2953872) | | | | | | | | | |
| EM2005382-001 | CPT002_BH55_0.1 | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | 0.0002 | 0.0003 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2953872) | | | | | | | | | |
| EM2005382-001 | CPT002_BH55_0.1 | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | <0.001 | 0.00 | No Limit |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2953872) | | | | | | | | | |
| EM2005382-001 | CPT002_BH55_0.1 | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | <0.0002 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |



| Sub-Matrix: SOIL | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|-------------|-----------------------------------|-------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2953872) - continued | | | | | | | | | |
| EM2005382-001 | CPT002_BH55_0.1 | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2953872) | | | | | | | | | |
| EM2005382-001 | CPT002_BH55_0.1 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | <0.0005 | 0.00 | No Limit |
| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EG020T: Total Metals by ICP-MS (QC Lot: 2951858) | | | | | | | | | |
| EM2005246-006 | Anonymous | EG020A-T: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| | | EG020A-T: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-T: Chromium | 7440-47-3 | 0.001 | mg/L | 0.010 | 0.005 | 71.2 | No Limit |
| | | EG020A-T: Copper | 7440-50-8 | 0.001 | mg/L | 0.004 | 0.004 | 0.00 | No Limit |
| | | EG020A-T: Lead | 7439-92-1 | 0.001 | mg/L | 0.002 | 0.002 | 0.00 | No Limit |
| | | EG020A-T: Nickel | 7440-02-0 | 0.001 | mg/L | 0.009 | 0.009 | 0.00 | No Limit |
| | | EG020A-T: Zinc | 7440-66-6 | 0.005 | mg/L | 0.012 | 0.012 | 0.00 | No Limit |
| EM2005425-002 | Anonymous | EG020A-T: Cadmium | 7440-43-9 | 0.0001 | mg/L | 0.0130 | 0.0129 | 0.00 | 0% - 20% |
| | | EG020A-T: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-T: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-T: Copper | 7440-50-8 | 0.001 | mg/L | 0.082 | 0.083 | 0.00 | 0% - 20% |
| | | EG020A-T: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | <0.001 | 0.00 | No Limit |
| | | EG020A-T: Nickel | 7440-02-0 | 0.001 | mg/L | 0.010 | 0.010 | 0.00 | 0% - 50% |
| | | EG020A-T: Zinc | 7440-66-6 | 0.005 | mg/L | 1.09 | 1.10 | 0.633 | 0% - 20% |
| EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2947727) | | | | | | | | | |
| EM2005280-001 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.0001 | mg/L | 0.122 | 0.113 | 7.67 | 0% - 20% |
| EM2005366-005 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | <0.0001 | 0.00 | No Limit |
| EP068A: Organochlorine Pesticides (OC) (QC Lot: 2947658) | | | | | | | | | |
| EM2005361-001 | Anonymous | EP068: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Hexachlorobenzene (HCB) | 118-74-1 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: beta-BHC | 319-85-7 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: gamma-BHC | 58-89-9 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|--|------------------|----------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP068A: Organochlorine Pesticides (OC) (QC Lot: 2947658) - continued | | | | | | | | | |
| EM2005361-001 | Anonymous | EP068: delta-BHC | 319-86-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Heptachlor epoxide | 1024-57-3 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: trans-Chlordane | 5103-74-2 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: alpha-Endosulfan | 959-98-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: cis-Chlordane | 5103-71-9 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Dieldrin | 60-57-1 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: 4,4'-DDE | 72-55-9 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Endrin | 72-20-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: beta-Endosulfan | 33213-65-9 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: 4,4'-DDD | 72-54-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Endrin aldehyde | 7421-93-4 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Endosulfan sulfate | 1031-07-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Endrin ketone | 53494-70-5 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: 4,4'-DDT | 50-29-3 | 2 | µg/L | <2.0 | <2.0 | 0.00 | No Limit |
| EP068: Methoxychlor | 72-43-5 | 2 | µg/L | <2.0 | <2.0 | 0.00 | No Limit | | |
| EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2947658) | | | | | | | | | |
| EM2005361-001 | Anonymous | EP068: Dichlorvos | 62-73-7 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Demeton-S-methyl | 919-86-8 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Dimethoate | 60-51-5 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Diazinon | 333-41-5 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Chlorpyrifos-methyl | 5598-13-0 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Malathion | 121-75-5 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Fenthion | 55-38-9 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Chlorpyrifos | 2921-88-2 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Pirimphos-ethyl | 23505-41-1 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Chlorfenvinphos | 470-90-6 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Bromophos-ethyl | 4824-78-6 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Fenamiphos | 22224-92-6 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Prothiofos | 34643-46-4 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Ethion | 563-12-2 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Carbophenothion | 786-19-6 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Azinphos Methyl | 86-50-0 | 0.5 | µg/L | <0.5 | <0.5 | 0.00 | No Limit |
| | | EP068: Monocrotophos | 6923-22-4 | 2 | µg/L | <2.0 | <2.0 | 0.00 | No Limit |
| | | EP068: Parathion-methyl | 298-00-0 | 2 | µg/L | <2.0 | <2.0 | 0.00 | No Limit |
| | | EP068: Parathion | 56-38-2 | 2 | µg/L | <2.0 | <2.0 | 0.00 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2947659) | | | | | | | | | |
| EM2005361-001 | Anonymous | EP071: C15 - C28 Fraction | ---- | 100 | µg/L | 670 | 540 | 22.0 | No Limit |
| | | EP071: C10 - C14 Fraction | ---- | 50 | µg/L | <50 | <50 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2947659) - continued | | | | | | | | | |
| EM2005361-001 | Anonymous | EP071: C29 - C36 Fraction | ---- | 50 | µg/L | 220 | 160 | 33.3 | No Limit |
| EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2950483) | | | | | | | | | |
| EM2005246-006 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM2005409-006 | Anonymous | EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2947659) | | | | | | | | | |
| EM2005361-001 | Anonymous | EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | 110 | <100 | 9.91 | No Limit |
| | | EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | 760 | 590 | 24.7 | No Limit |
| | | EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | <100 | 0.00 | No Limit |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2950483) | | | | | | | | | |
| EM2005246-006 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EM2005409-006 | Anonymous | EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | <20 | 0.00 | No Limit |
| EP080: BTEXN (QC Lot: 2950483) | | | | | | | | | |
| EM2005246-006 | Anonymous | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| EM2005409-006 | Anonymous | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| | | EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | <1 | 0.00 | No Limit |
| | | EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | | 106-42-3 | | | | | | |
| | | EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | <2 | 0.00 | No Limit |
| | | EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | <5 | 0.00 | No Limit |
| EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2954173) | | | | | | | | | |
| EM2005316-002 | Anonymous | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| EM2005316-006 | Anonymous | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | 0.10 | 0.10 | 0.00 | 0% - 50% |
| | | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|---|------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2954173) | | | | | | | | | |
| EM2005316-002 | Anonymous | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EM2005316-006 | Anonymous | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | <0.1 | 0.00 | No Limit |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2954173) | | | | | | | | | |
| EM2005316-002 | Anonymous | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EM2005316-006 | Anonymous | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | <0.02 | 0.00 | No Limit |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Laboratory Duplicate (DUP) Report | | | | | |
|---|------------------|--|-------------|-----------------------------------|------|-----------------|------------------|---------|---------------------|
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | LOR | Unit | Original Result | Duplicate Result | RPD (%) | Recovery Limits (%) |
| EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2954173) - continued | | | | | | | | | |
| EM2005316-006 | Anonymous | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2954173) | | | | | | | | | |
| EM2005316-002 | Anonymous | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EM2005316-006 | Anonymous | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | <0.05 | 0.00 | No Limit |
| EP231P: PFAS Sums (QC Lot: 2954173) | | | | | | | | | |
| EM2005316-002 | Anonymous | EP231X: Sum of PFAS | ---- | 0.01 | µg/L | <0.01 | <0.01 | 0.00 | No Limit |
| EM2005316-006 | Anonymous | EP231X: Sum of PFAS | ---- | 0.01 | µg/L | 0.10 | 0.10 | 0.00 | 0% - 50% |



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|------------|-----|-------|-----------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| Method: Compound | CAS Number | LOR | Unit | | | LCS | Low | High |
| EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2953212) | | | | | | | | |
| EG005T: Arsenic | 7440-38-2 | 5 | mg/kg | <5 | 21.7 mg/kg | 101 | 78.5 | 107 |
| EG005T: Cadmium | 7440-43-9 | 1 | mg/kg | <1 | 4.64 mg/kg | 98.2 | 76.2 | 108 |
| EG005T: Chromium | 7440-47-3 | 2 | mg/kg | <2 | 43.9 mg/kg | 102 | 77.7 | 110 |
| EG005T: Copper | 7440-50-8 | 5 | mg/kg | <5 | 32 mg/kg | 94.9 | 78.1 | 108 |
| EG005T: Lead | 7439-92-1 | 5 | mg/kg | <5 | 40 mg/kg | 103 | 78.4 | 106 |
| EG005T: Molybdenum | 7439-98-7 | 2 | mg/kg | <2 | 7.9 mg/kg | 94.6 | 78.0 | 114 |
| EG005T: Nickel | 7440-02-0 | 2 | mg/kg | <2 | 55 mg/kg | 106 | 79.9 | 109 |
| EG005T: Selenium | 7782-49-2 | 5 | mg/kg | <5 | 5.37 mg/kg | 102 | 92.0 | 110 |
| EG005T: Silver | 7440-22-4 | 2 | mg/kg | <2 | 2.1 mg/kg | 93.8 | 80.0 | 108 |
| EG005T: Tin | 7440-31-5 | 5 | mg/kg | <5 | 5.2 mg/kg | 92.8 | 78.4 | 117 |
| EG005T: Zinc | 7440-66-6 | 5 | mg/kg | <5 | 60.8 mg/kg | 105 | 79.1 | 110 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2953211) | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.1 | mg/kg | <0.1 | 2.57 mg/kg | 97.1 | 76.9 | 110 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2953241) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 20 mg/kg | 70.5 | 70.0 | 130 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2953242) | | | | | | | | |
| EG048G: Hexavalent Chromium | 18540-29-9 | 0.5 | mg/kg | <0.5 | 20 mg/kg | 70.1 | 70.0 | 130 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2953854) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 84.0 | 70.0 | 130 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2953855) | | | | | | | | |
| EK026SF: Total Cyanide | 57-12-5 | 1 | mg/kg | <1 | 20 mg/kg | 82.8 | 70.0 | 130 |
| EK040T: Fluoride Total (QCLot: 2953253) | | | | | | | | |
| EK040T: Fluoride | 16984-48-8 | 40 | mg/kg | <40 | 400 mg/kg | 95.0 | 75.2 | 110 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2953091) | | | | | | | | |
| EP066-EM: Total Polychlorinated biphenyls | ---- | 0.1 | mg/kg | <0.1 | 1 mg/kg | 116 | 70.8 | 136 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2950265) | | | | | | | | |
| EP074-UT: Benzene | 71-43-2 | 0.2 | mg/kg | <0.2 | 2.1 mg/kg | 92.7 | 69.2 | 116 |
| EP074-UT: Toluene | 108-88-3 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 104 | 67.7 | 116 |
| EP074-UT: Ethylbenzene | 100-41-4 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 103 | 66.6 | 115 |
| EP074-UT: meta- & para-Xylene | 108-38-3 | 0.5 | mg/kg | <0.5 | 4.2 mg/kg | 99.6 | 65.2 | 112 |
| | 106-42-3 | | | | | | | |
| EP074-UT: Styrene | 100-42-5 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 97.4 | 69.4 | 111 |
| EP074-UT: ortho-Xylene | 95-47-6 | 0.5 | mg/kg | <0.5 | 2.1 mg/kg | 98.8 | 68.4 | 110 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|-----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP074H: Naphthalene (QCLot: 2950265) | | | | | | | | |
| EP074-UT: Naphthalene | 91-20-3 | 1 | mg/kg | <1 | 0.6 mg/kg | # 125 | 72.3 | 114 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2950265) | | | | | | | | |
| EP074-UT: Vinyl chloride | 75-01-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 82.0 | 47.0 | 138 |
| EP074-UT: 1,1-Dichloroethene | 75-35-4 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 94.5 | 57.6 | 125 |
| EP074-UT: Methylene chloride | 75-09-2 | 0.4 | mg/kg | <0.4 | 2.1 mg/kg | 84.4 | 72.3 | 115 |
| EP074-UT: trans-1,2-Dichloroethene | 156-60-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 92.0 | 60.5 | 122 |
| EP074-UT: cis-1,2-Dichloroethene | 156-59-2 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 93.6 | 70.3 | 112 |
| EP074-UT: Chloroform | 67-66-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 93.1 | 66.6 | 115 |
| EP074-UT: 1,1,1-Trichloroethane | 71-55-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 103 | 64.4 | 122 |
| EP074-UT: Carbon Tetrachloride | 56-23-5 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 102 | 58.4 | 127 |
| EP074-UT: 1,2-Dichloroethane | 107-06-2 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 91.0 | 72.9 | 114 |
| EP074-UT: Trichloroethene | 79-01-6 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 101 | 64.7 | 115 |
| EP074-UT: 1,1,2-Trichloroethane | 79-00-5 | 0.04 | mg/kg | <0.04 | 0.1 mg/kg | 111 | 72.6 | 116 |
| EP074-UT: Tetrachloroethene | 127-18-4 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 104 | 60.0 | 119 |
| EP074-UT: 1,1,1,2-Tetrachloroethane | 630-20-6 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 104 | 71.8 | 116 |
| EP074-UT: 1,1,1,2,2-Tetrachloroethane | 79-34-5 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | # 127 | 66.1 | 116 |
| EP074-UT: Hexachlorobutadiene | 87-68-3 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 86.4 | 39.8 | 128 |
| EP074-UT: Chlorobenzene | 108-90-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 101 | 70.3 | 113 |
| EP074-UT: 1,4-Dichlorobenzene | 106-46-7 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 91.2 | 62.6 | 113 |
| EP074-UT: 1,2-Dichlorobenzene | 95-50-1 | 0.02 | mg/kg | <0.02 | 0.1 mg/kg | 95.6 | 70.8 | 110 |
| EP074-UT: 1,2,4-Trichlorobenzene | 120-82-1 | 0.01 | mg/kg | <0.01 | 0.1 mg/kg | 69.2 | 48.4 | 120 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2953089) | | | | | | | | |
| EP075-EM: 2-Chlorophenol | 95-57-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 109 | 71.4 | 123 |
| EP075-EM: 2,4-Dichlorophenol | 120-83-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 122 | 73.1 | 132 |
| EP075-EM: 2,6-Dichlorophenol | 87-65-0 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 72.2 | 132 |
| EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 102 | 70.8 | 128 |
| EP075-EM: 2,4,5-Trichlorophenol | 95-95-4 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 103 | 70.9 | 134 |
| EP075-EM: 2,4,6-Trichlorophenol | 88-06-2 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 103 | 70.9 | 126 |
| EP075-EM: 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 103 | 61.9 | 126 |
| EP075-EM: 2,3,4,5 & 2,3,4,6-Tetrachlorophenol | 4901-51-3/5
8-90-2 | 0.05 | mg/kg | <0.05 | 4 mg/kg | 104 | 47.2 | 128 |
| EP075-EM: Pentachlorophenol | 87-86-5 | 0.2 | mg/kg | <0.2 | 4 mg/kg | 95.7 | 44.0 | 135 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2953089) | | | | | | | | |
| EP075-EM: Phenol | 108-95-2 | 1 | mg/kg | <1 | 2 mg/kg | 112 | 71.5 | 127 |
| EP075-EM: 2-Methylphenol | 95-48-7 | 1 | mg/kg | <1 | 2 mg/kg | 108 | 70.2 | 129 |
| EP075-EM: 3- & 4-Methylphenol | 1319-77-3 | 1 | mg/kg | <1 | 4 mg/kg | 115 | 74.0 | 130 |
| EP075-EM: 2-Nitrophenol | 88-75-5 | 1 | mg/kg | <1 | 2 mg/kg | 115 | 70.9 | 133 |
| EP075-EM: 2,4-Dimethylphenol | 105-67-9 | 1 | mg/kg | <1 | 2 mg/kg | 114 | 64.8 | 132 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|---|----------------------|------|-------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2953089) - continued | | | | | | | | |
| EP075-EM: 2,4-Dinitrophenol | 51-28-5 | 5 | mg/kg | <5 | 10 mg/kg | 55.4 | 41.0 | 156 |
| EP075-EM: 4-Nitrophenol | 100-02-7 | 5 | mg/kg | <5 | 10 mg/kg | 116 | 52.6 | 128 |
| EP075-EM: 2-Methyl-4,6-dinitrophenol | 8071-51-0 | 5 | mg/kg | <5 | 10 mg/kg | 89.4 | 42.6 | 125 |
| EP075-EM: Dinoseb | 88-85-7 | 5 | mg/kg | <5 | 10 mg/kg | 92.9 | 47.3 | 128 |
| EP075-EM: 2-Cyclohexyl-4,6-Dinitrophenol | 131-89-5 | 5 | mg/kg | <5 | 10 mg/kg | 86.7 | 34.5 | 137 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2953089) | | | | | | | | |
| EP075-EM: Naphthalene | 91-20-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 105 | 73.0 | 131 |
| EP075-EM: Acenaphthene | 83-32-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 108 | 70.8 | 130 |
| EP075-EM: Acenaphthylene | 208-96-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 110 | 72.0 | 135 |
| EP075-EM: Fluorene | 86-73-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 111 | 74.4 | 131 |
| EP075-EM: Phenanthrene | 85-01-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 106 | 73.3 | 130 |
| EP075-EM: Anthracene | 120-12-7 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 106 | 59.4 | 127 |
| EP075-EM: Fluoranthene | 206-44-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 75.3 | 132 |
| EP075-EM: Pyrene | 129-00-0 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 119 | 75.4 | 130 |
| EP075-EM: Benz(a)anthracene | 56-55-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 115 | 69.6 | 133 |
| EP075-EM: Chrysene | 218-01-9 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 116 | 75.0 | 133 |
| EP075-EM: Benzo(b+j) & Benzo(k)fluoranthene | 205-99-2
207-08-9 | 1 | mg/kg | <1.0 | 4 mg/kg | 111 | 75.8 | 133 |
| EP075-EM: Benzo(a)pyrene | 50-32-8 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 110 | 65.1 | 130 |
| EP075-EM: Indeno(1,2,3.cd)pyrene | 193-39-5 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 109 | 72.1 | 134 |
| EP075-EM: Dibenz(a,h)anthracene | 53-70-3 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 110 | 72.9 | 135 |
| EP075-EM: Benzo(g,h,i)perylene | 191-24-2 | 0.5 | mg/kg | <0.5 | 2 mg/kg | 110 | 71.3 | 134 |
| EP075I: Organochlorine Pesticides (QCLot: 2953089) | | | | | | | | |
| EP075-EM: alpha-BHC | 319-84-6 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 99.0 | 71.0 | 129 |
| EP075-EM: Hexachlorobenzene (HCB) | 118-74-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 98.5 | 65.9 | 125 |
| EP075-EM: beta-BHC | 319-85-7 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 100 | 66.2 | 130 |
| EP075-EM: gamma-BHC | 58-89-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 101 | 70.8 | 130 |
| EP075-EM: delta-BHC | 319-86-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 108 | 68.7 | 134 |
| EP075-EM: Heptachlor | 76-44-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 107 | 67.2 | 131 |
| EP075-EM: Aldrin | 309-00-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 109 | 70.2 | 130 |
| EP075-EM: Heptachlor epoxide | 1024-57-3 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 112 | 65.6 | 130 |
| EP075-EM: cis-Chlordane | 5103-71-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 65.3 | 133 |
| EP075-EM: trans-Chlordane | 5103-74-2 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 66.7 | 131 |
| EP075-EM: Endosulfan 1 | 959-98-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 120 | 67.9 | 135 |
| EP075-EM: 4,4'-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 119 | 70.9 | 132 |
| EP075-EM: Dieldrin | 60-57-1 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 114 | 70.0 | 133 |
| EP075-EM: Endrin aldehyde | 7421-93-4 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 104 | 49.6 | 157 |
| EP075-EM: Endrin | 72-20-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 112 | 55.4 | 148 |
| EP075-EM: Endosulfan 2 | 33213-65-9 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 71.4 | 135 |

Laboratory Control Spike (LCS) Report

| Method: Compound | CAS Number | LOR | Unit | Result | Concentration | Spine Recovery (%) | LCS | Low | High |
|--|------------|--------|-------|---------|---------------|--------------------|------|------|------|
| EP075I: Organochlorine Pesticides (QCLot: 2953089) - continued | | | | | | | | | |
| EP075-EM: 4,4'-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 119 | 74.8 | 134 | |
| EP075-EM: Endosulfan sulfate | 1031-07-8 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 113 | 70.2 | 135 | |
| EP075-EM: 4,4'-DDT | 50-29-3 | 0.05 | mg/kg | <0.05 | 2 mg/kg | 116 | 67.1 | 133 | |
| EP075-EM: Methoxychlor | 72-43-5 | 0.03 | mg/kg | <0.03 | 2 mg/kg | 115 | 63.6 | 135 | |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2950265) | | | | | | | | | |
| EP074-UT: C6 - C9 Fraction | ---- | 10 | mg/kg | <10 | 39.6 mg/kg | 114 | 61.1 | 119 | |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2953090) | | | | | | | | | |
| EP071-EM: C10 - C14 Fraction | ---- | 50 | mg/kg | <50 | 790 mg/kg | 83.0 | 69.9 | 128 | |
| EP071-EM: C15 - C28 Fraction | ---- | 100 | mg/kg | <100 | 3040 mg/kg | 96.9 | 83.0 | 124 | |
| EP071-EM: C29 - C36 Fraction | ---- | 100 | mg/kg | <100 | 1520 mg/kg | 88.2 | 76.9 | 117 | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2950265) | | | | | | | | | |
| EP074-UT: C6 - C10 Fraction | C6_C10 | 10 | mg/kg | <10 | 48.9 mg/kg | 113 | 59.9 | 119 | |
| EP074-UT: C6 - C10 Fraction minus BTEX (F1) | C6_C10-BTE | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- | ---- |
| | X | | | | | | | | |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2953090) | | | | | | | | | |
| EP071-EM: >C10 - C16 Fraction | ---- | 50 | mg/kg | <50 | 1140 mg/kg | 99.3 | 70.2 | 126 | |
| EP071-EM: >C16 - C34 Fraction | ---- | 100 | mg/kg | <100 | 4050 mg/kg | 87.5 | 81.4 | 120 | |
| EP071-EM: >C34 - C40 Fraction | ---- | 100 | mg/kg | <100 | 270 mg/kg | 75.9 | 53.4 | 129 | |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2953872) | | | | | | | | | |
| EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 90.4 | 70.0 | 130 | |
| EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 114 | 70.0 | 130 | |
| EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 87.6 | 70.0 | 130 | |
| EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 91.6 | 70.0 | 130 | |
| EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 84.4 | 70.0 | 130 | |
| EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 84.4 | 70.0 | 130 | |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2953872) | | | | | | | | | |
| EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.001 | mg/kg | <0.001 | 0.00625 mg/kg | 99.9 | 70.0 | 130 | |
| EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 96.0 | 70.0 | 130 | |
| EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 95.6 | 70.0 | 130 | |
| EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 99.2 | 70.0 | 130 | |
| EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 98.8 | 70.0 | 130 | |
| EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 88.0 | 70.0 | 130 | |
| EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 90.0 | 70.0 | 130 | |
| EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 87.2 | 70.0 | 130 | |
| EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 91.2 | 70.0 | 130 | |
| EP231X: Perfluorotridecanoic acid (PFTTrDA) | 72629-94-8 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 82.4 | 70.0 | 130 | |
| EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 85.6 | 70.0 | 130 | |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2953872) | | | | | | | | | |



| Sub-Matrix: SOIL | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | | |
|---|-------------|--------|-------|-----------------------------|---------------------------------------|---------------|--------------------|---------------------|------|
| Method: Compound | CAS Number | LOR | Unit | | Result | Spike | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | Concentration | LCS | Low | High |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2953872) - continued | | | | | | | | | |
| EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 81.6 | 70.0 | 130 | |
| EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 92.0 | 70.0 | 130 | |
| EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 84.4 | 70.0 | 130 | |
| EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 99.8 | 70.0 | 130 | |
| EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.0005 | mg/kg | <0.0005 | 0.00312 mg/kg | 91.0 | 70.0 | 130 | |
| EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 91.6 | 70.0 | 130 | |
| EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.0002 | mg/kg | <0.0002 | 0.00125 mg/kg | 98.0 | 70.0 | 130 | |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2953872) | | | | | | | | | |
| EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 96.8 | 70.0 | 130 | |
| EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 96.4 | 70.0 | 130 | |
| EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 99.6 | 70.0 | 130 | |
| EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.0005 | mg/kg | <0.0005 | 0.00125 mg/kg | 100 | 70.0 | 130 | |
| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | | |
| Method: Compound | CAS Number | LOR | Unit | | Result | Spike | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | Concentration | LCS | Low | High |
| EG020T: Total Metals by ICP-MS (QCLot: 2951858) | | | | | | | | | |
| EG020A-T: Arsenic | 7440-38-2 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 102 | 89.2 | 113 | |
| EG020A-T: Cadmium | 7440-43-9 | 0.0001 | mg/L | <0.0001 | 0.1 mg/L | 106 | 86.4 | 112 | |
| EG020A-T: Chromium | 7440-47-3 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 95.2 | 86.9 | 110 | |
| EG020A-T: Copper | 7440-50-8 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 96.4 | 86.9 | 109 | |
| EG020A-T: Lead | 7439-92-1 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 99.0 | 88.3 | 110 | |
| EG020A-T: Nickel | 7440-02-0 | 0.001 | mg/L | <0.001 | 0.1 mg/L | 101 | 87.9 | 111 | |
| EG020A-T: Zinc | 7440-66-6 | 0.005 | mg/L | <0.005 | 0.1 mg/L | 110 | 86.7 | 114 | |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2947727) | | | | | | | | | |
| EG035T: Mercury | 7439-97-6 | 0.0001 | mg/L | <0.0001 | 0.01 mg/L | 108 | 72.6 | 115 | |
| EP068A: Organochlorine Pesticides (OC) (QCLot: 2947658) | | | | | | | | | |
| EP068: alpha-BHC | 319-84-6 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 78.4 | 50.6 | 119 | |
| EP068: Hexachlorobenzene (HCB) | 118-74-1 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 66.4 | 44.2 | 117 | |
| EP068: beta-BHC | 319-85-7 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 77.8 | 53.7 | 119 | |
| EP068: gamma-BHC | 58-89-9 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 77.6 | 47.7 | 117 | |
| EP068: delta-BHC | 319-86-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 77.1 | 50.1 | 117 | |
| EP068: Heptachlor | 76-44-8 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 77.7 | 46.5 | 118 | |
| EP068: Aldrin | 309-00-2 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 77.4 | 48.0 | 115 | |
| EP068: Heptachlor epoxide | 1024-57-3 | 0.5 | µg/L | <0.5 | 2.5 µg/L | 79.1 | 51.1 | 119 | |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Method Blank (MB)
Report | Laboratory Control Spike (LCS) Report | | | |
|--|------------|------|------|-----------------------------|---------------------------------------|---------------------------|---------------------------------|-----|
| | | | | | Spike
Concentration | Spike Recovery (%)
LCS | Recovery Limits (%)
Low High | |
| Method: Compound | CAS Number | LOR | Unit | Result | | | | |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2950483) - continued | | | | | | | | |
| EP080: C6 - C9 Fraction | ---- | 20 | µg/L | <20 | 360 µg/L | 98.2 | 65.5 | 129 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2947659) | | | | | | | | |
| EP071: >C10 - C16 Fraction | ---- | 100 | µg/L | <100 | 5690 µg/L | 90.2 | 47.3 | 129 |
| EP071: >C16 - C34 Fraction | ---- | 100 | µg/L | <100 | 20700 µg/L | 102 | 50.4 | 133 |
| EP071: >C34 - C40 Fraction | ---- | 100 | µg/L | <100 | 1510 µg/L | 101 | 45.2 | 136 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2950483) | | | | | | | | |
| EP080: C6 - C10 Fraction | C6_C10 | 20 | µg/L | <20 | 450 µg/L | 93.6 | 64.3 | 126 |
| EP080: BTEXN (QCLot: 2950483) | | | | | | | | |
| EP080: Benzene | 71-43-2 | 1 | µg/L | <1 | 20 µg/L | 98.6 | 69.8 | 124 |
| EP080: Toluene | 108-88-3 | 2 | µg/L | <2 | 20 µg/L | 107 | 73.6 | 126 |
| EP080: Ethylbenzene | 100-41-4 | 2 | µg/L | <2 | 20 µg/L | 98.8 | 72.0 | 126 |
| EP080: meta- & para-Xylene | 108-38-3 | 2 | µg/L | <2 | 40 µg/L | 100 | 71.5 | 132 |
| | 106-42-3 | | | | | | | |
| EP080: ortho-Xylene | 95-47-6 | 2 | µg/L | <2 | 20 µg/L | 98.1 | 76.5 | 132 |
| EP080: Naphthalene | 91-20-3 | 5 | µg/L | <5 | 5 µg/L | 102 | 70.5 | 127 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2954173) | | | | | | | | |
| EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 83.2 | 72.0 | 130 |
| EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 85.0 | 71.0 | 127 |
| EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 92.8 | 68.0 | 131 |
| EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 96.2 | 69.0 | 134 |
| EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.01 | µg/L | <0.01 | 0.25 µg/L | 78.4 | 65.0 | 140 |
| EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 92.8 | 53.0 | 142 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2954173) | | | | | | | | |
| EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.1 | µg/L | <0.1 | 1.25 µg/L | 96.7 | 73.0 | 129 |
| EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 105 | 72.0 | 129 |
| EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 99.4 | 72.0 | 129 |
| EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 98.4 | 72.0 | 130 |
| EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.01 | µg/L | <0.01 | 0.25 µg/L | 104 | 71.0 | 133 |
| EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 103 | 69.0 | 130 |
| EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 93.4 | 71.0 | 129 |
| EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 111 | 69.0 | 133 |
| EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 87.0 | 72.0 | 134 |
| EP231X: Perfluorotridecanoic acid (PFTriDA) | 72629-94-8 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 68.6 | 65.0 | 144 |
| EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.05 | µg/L | <0.05 | 0.625 µg/L | 104 | 71.0 | 132 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2954173) | | | | | | | | |
| EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 103 | 67.0 | 137 |
| EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.05 | µg/L | <0.05 | 0.625 µg/L | 92.8 | 70.0 | 130 |
| EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.05 | µg/L | <0.05 | 0.625 µg/L | 96.8 | 70.0 | 130 |



Sub-Matrix: **WATER**

| Method: Compound | | | | Method Blank (MB)
Report
Result | Laboratory Control Spike (LCS) Report | | | |
|---|-------------|------|------|---------------------------------------|---------------------------------------|--------------------|---------------------|------|
| | | | | | Spike
Concentration | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | LCS | Low | High |
| CAS Number | LOR | Unit | | | | | | |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2954173) - continued | | | | | | | | |
| EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.05 | µg/L | <0.05 | 0.625 µg/L | 99.1 | 70.0 | 130 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.05 | µg/L | <0.05 | 0.625 µg/L | 102 | 70.0 | 130 |
| EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 101 | 65.0 | 136 |
| EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.02 | µg/L | <0.02 | 0.25 µg/L | 94.0 | 61.0 | 135 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2954173) | | | | | | | | |
| EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.05 | µg/L | <0.05 | 0.25 µg/L | 94.2 | 63.0 | 143 |
| EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.05 | µg/L | <0.05 | 0.25 µg/L | 95.0 | 67.0 | 140 |
| EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.05 | µg/L | <0.05 | 0.25 µg/L | 92.0 | 67.0 | 138 |
| EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.05 | µg/L | <0.05 | 0.25 µg/L | 91.4 | 70.0 | 130 |

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

| Laboratory sample ID | | | | Matrix Spike (MS) Report | | | |
|--|------------------|-----------------------------|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike
Concentration | SpikeRecovery(%) | Recovery Limits (%) | |
| | | | | | MS | Low | High |
| Client sample ID | Method: Compound | CAS Number | | | | | |
| EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2953212) | | | | | | | |
| EM2005412-002 | Anonymous | EG005T: Arsenic | 7440-38-2 | 50 mg/kg | 116 | 78.0 | 124 |
| | | EG005T: Cadmium | 7440-43-9 | 50 mg/kg | 95.6 | 84.0 | 116 |
| | | EG005T: Chromium | 7440-47-3 | 50 mg/kg | 98.0 | 79.0 | 121 |
| | | EG005T: Copper | 7440-50-8 | 50 mg/kg | 104 | 80.0 | 120 |
| | | EG005T: Lead | 7439-92-1 | 50 mg/kg | 100 | 80.0 | 120 |
| | | EG005T: Nickel | 7440-02-0 | 50 mg/kg | 107 | 78.0 | 120 |
| | | EG005T: Zinc | 7440-66-6 | 50 mg/kg | 90.5 | 80.0 | 120 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2953211) | | | | | | | |
| EM2004001-019 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.5 mg/kg | 108 | 76.0 | 116 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2953241) | | | | | | | |
| EM2004001-019 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 20 mg/kg | 70.5 | 58.0 | 114 |
| EM2004001-019 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 20 mg/kg | 89.4 | 58.0 | 114 |
| EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2953242) | | | | | | | |
| EM2005409-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 20 mg/kg | 59.2 | 58.0 | 114 |
| EM2005409-001 | Anonymous | EG048G: Hexavalent Chromium | 18540-29-9 | 20 mg/kg | 78.2 | 58.0 | 114 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2953854) | | | | | | | |
| EM2005247-002 | Anonymous | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 88.9 | 70.0 | 130 |
| EK026SF: Total CN by Segmented Flow Analyser (QCLot: 2953855) | | | | | | | |
| EM2005382-006 | QC01_310320 | EK026SF: Total Cyanide | 57-12-5 | 20 mg/kg | 87.4 | 70.0 | 130 |
| EK040T: Fluoride Total (QCLot: 2953253) | | | | | | | |
| EM2005326-002 | Anonymous | EK040T: Fluoride | 16984-48-8 | 400 mg/kg | 89.5 | 70.0 | 130 |
| EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2953091) | | | | | | | |
| EM2005316-002 | Anonymous | EP066-EM: Total Polychlorinated biphenyls | ---- | 1 mg/kg | 106 | 36.0 | 152 |
| EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2950265) | | | | | | | |
| EM2005326-002 | Anonymous | EP074-UT: Benzene | 71-43-2 | 2 mg/kg | 99.7 | 50.0 | 138 |
| | | EP074-UT: Toluene | 108-88-3 | 2 mg/kg | 104 | 56.0 | 134 |
| EP074I: Volatile Halogenated Compounds (QCLot: 2950265) | | | | | | | |
| EM2005326-002 | Anonymous | EP074-UT: 1,1-Dichloroethene | 75-35-4 | 2 mg/kg | 113 | 26.0 | 141 |
| | | EP074-UT: Trichloroethene | 79-01-6 | 2 mg/kg | 102 | 50.0 | 134 |
| | | EP074-UT: Chlorobenzene | 108-90-7 | 2 mg/kg | 101 | 28.0 | 134 |
| EP075A: Phenolic Compounds (Halogenated) (QCLot: 2953089) | | | | | | | |
| EM2005263-007 | Anonymous | EP075-EM: 2-Chlorophenol | 95-57-8 | 3 mg/kg | 99.3 | 34.0 | 118 |
| | | EP075-EM: 4-Chloro-3-methylphenol | 59-50-7 | 3 mg/kg | 104 | 41.0 | 139 |
| | | EP075-EM: Pentachlorophenol | 87-86-5 | 3 mg/kg | 101 | 10.0 | 144 |
| EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 2953089) | | | | | | | |
| EM2005263-007 | Anonymous | EP075-EM: Phenol | 108-95-2 | 3 mg/kg | 106 | 31.5 | 134 |
| | | EP075-EM: 2-Nitrophenol | 88-75-5 | 3 mg/kg | 120 | 13.0 | 129 |
| EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 2953089) | | | | | | | |
| EM2005263-007 | Anonymous | EP075-EM: Acenaphthene | 83-32-9 | 3 mg/kg | 102 | 46.0 | 138 |
| | | EP075-EM: Pyrene | 129-00-0 | 3 mg/kg | 113 | 26.5 | 169 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2950265) | | | | | | | |
| EM2005326-002 | Anonymous | EP074-UT: C6 - C9 Fraction | ---- | 28 mg/kg | 101 | 43.0 | 111 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2953090) | | | | | | | |
| EM2005382-001 | CPT002_BH55_0.1 | EP071-EM: C10 - C14 Fraction | ---- | 790 mg/kg | 82.6 | 53.0 | 123 |
| | | EP071-EM: C15 - C28 Fraction | ---- | 4000 mg/kg | 72.3 | 70.0 | 124 |
| | | EP071-EM: C29 - C36 Fraction | ---- | 1520 mg/kg | 82.1 | 64.0 | 118 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2950265) | | | | | | | |
| EM2005326-002 | Anonymous | EP074-UT: C6 - C10 Fraction | C6_C10 | 33 mg/kg | 95.6 | 42.0 | 106 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2953090) | | | | | | | |
| EM2005382-001 | CPT002_BH55_0.1 | EP071-EM: >C10 - C16 Fraction | ---- | 1140 mg/kg | 98.4 | 65.0 | 123 |
| | | EP071-EM: >C16 - C34 Fraction | ---- | 4050 mg/kg | 84.3 | 67.0 | 121 |



Sub-Matrix: **SOIL**

| Sub-Matrix: SOIL | | | | Matrix Spike (MS) Report | | | |
|--|------------------|---|-------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2953090) - continued | | | | | | | |
| EM2005382-001 | CPT002_BH55_0.1 | EP071-EM: >C34 - C40 Fraction | ---- | 270 mg/kg | 63.1 | 44.0 | 126 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2953872) | | | | | | | |
| EM2005382-001 | CPT002_BH55_0.1 | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.00125 mg/kg | 74.8 | 50.0 | 130 |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.00125 mg/kg | 114 | 50.0 | 130 |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.00125 mg/kg | 103 | 50.0 | 130 |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.00125 mg/kg | 105 | 50.0 | 130 |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.00125 mg/kg | 86.8 | 50.0 | 130 |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.00125 mg/kg | 82.8 | 50.0 | 130 |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2953872) | | | | | | | |
| EM2005382-001 | CPT002_BH55_0.1 | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 0.00625 mg/kg | 109 | 30.0 | 130 |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.00125 mg/kg | 92.4 | 50.0 | 130 |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.00125 mg/kg | 114 | 50.0 | 130 |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.00125 mg/kg | 89.2 | 50.0 | 130 |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.00125 mg/kg | 98.0 | 50.0 | 130 |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.00125 mg/kg | 91.2 | 50.0 | 130 |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.00125 mg/kg | 88.8 | 50.0 | 130 |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.00125 mg/kg | 95.2 | 50.0 | 130 |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.00125 mg/kg | 97.2 | 50.0 | 130 |
| | | EP231X: Perfluorotridecanoic acid (PFTeDA) | 72629-94-8 | 0.00125 mg/kg | 83.6 | 30.0 | 130 |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.00312 mg/kg | 96.3 | 30.0 | 130 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2953872) | | | | | | | |
| EM2005382-001 | CPT002_BH55_0.1 | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.00125 mg/kg | 90.8 | 50.0 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.00312 mg/kg | 94.9 | 30.0 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.00312 mg/kg | 93.1 | 30.0 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.00312 mg/kg | 106 | 30.0 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.00312 mg/kg | 104 | 30.0 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.00125 mg/kg | 96.4 | 30.0 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.00125 mg/kg | 106 | 30.0 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2953872) | | | | | | | |
| EM2005382-001 | CPT002_BH55_0.1 | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.00125 mg/kg | 101 | 50.0 | 130 |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.00125 mg/kg | 97.2 | 50.0 | 130 |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.00125 mg/kg | 110 | 50.0 | 130 |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.00125 mg/kg | 114 | 50.0 | 130 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|--|------------------|--|------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EG020T: Total Metals by ICP-MS (QCLot: 2951858) | | | | | | | |
| EM2005246-006 | Anonymous | EG020A-T: Arsenic | 7440-38-2 | 1 mg/L | 103 | 82.0 | 118 |
| | | EG020A-T: Cadmium | 7440-43-9 | 0.25 mg/L | 108 | 75.0 | 129 |
| | | EG020A-T: Chromium | 7440-47-3 | 1 mg/L | 100 | 80.0 | 118 |
| | | EG020A-T: Copper | 7440-50-8 | 1 mg/L | 102 | 81.0 | 115 |
| | | EG020A-T: Lead | 7439-92-1 | 1 mg/L | 120 | 83.0 | 121 |
| | | EG020A-T: Nickel | 7440-02-0 | 1 mg/L | 103 | 80.0 | 118 |
| | | EG020A-T: Zinc | 7440-66-6 | 1 mg/L | 104 | 74.0 | 116 |
| EG035T: Total Recoverable Mercury by FIMS (QCLot: 2947727) | | | | | | | |
| EM2005345-001 | Anonymous | EG035T: Mercury | 7439-97-6 | 0.01 mg/L | 88.1 | 70.0 | 130 |
| EP068A: Organochlorine Pesticides (OC) (QCLot: 2947658) | | | | | | | |
| EM2005361-002 | Anonymous | EP068: gamma-BHC | 58-89-9 | 2.5 µg/L | 49.6 | 47.0 | 119 |
| | | EP068: Heptachlor | 76-44-8 | 2.5 µg/L | 49.0 | 32.0 | 117 |
| | | EP068: Aldrin | 309-00-2 | 2.5 µg/L | 51.4 | 43.0 | 116 |
| | | EP068: Dieldrin | 60-57-1 | 2.5 µg/L | 50.9 | 43.0 | 124 |
| | | EP068: Endrin | 72-20-8 | 2.5 µg/L | 61.5 | 42.0 | 128 |
| | | EP068: 4,4`-DDT | 50-29-3 | 2.5 µg/L | 47.7 | 26.8 | 114 |
| EP068B: Organophosphorus Pesticides (OP) (QCLot: 2947658) | | | | | | | |
| EM2005361-002 | Anonymous | EP068: Diazinon | 333-41-5 | 2.5 µg/L | 55.7 | 48.0 | 110 |
| | | EP068: Chlorpyrifos-methyl | 5598-13-0 | 2.5 µg/L | 52.4 | 29.6 | 118 |
| | | EP068: Pirimphos-ethyl | 23505-41-1 | 2.5 µg/L | 49.6 | 39.0 | 111 |
| | | EP068: Bromophos-ethyl | 4824-78-6 | 2.5 µg/L | 46.5 | 32.0 | 94.0 |
| | | EP068: Prothiofos | 34643-46-4 | 2.5 µg/L | 49.7 | 44.0 | 108 |
| EP080/071: Total Petroleum Hydrocarbons (QCLot: 2950483) | | | | | | | |
| EM2005382-007 | QC03_310320 | EP080: C6 - C9 Fraction | ---- | 280 µg/L | 83.5 | 43.0 | 125 |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2950483) | | | | | | | |
| EM2005382-007 | QC03_310320 | EP080: C6 - C10 Fraction | C6_C10 | 330 µg/L | 77.5 | 44.0 | 122 |
| EP080: BTEXN (QCLot: 2950483) | | | | | | | |
| EM2005382-007 | QC03_310320 | EP080: Benzene | 71-43-2 | 20 µg/L | 103 | 68.0 | 130 |
| | | EP080: Toluene | 108-88-3 | 20 µg/L | 106 | 72.0 | 132 |
| EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2954173) | | | | | | | |
| EM2005316-003 | Anonymous | EP231X: Perfluorobutane sulfonic acid (PFBS) | 375-73-5 | 0.25 µg/L | 92.0 | 50.0 | 130 |
| | | EP231X: Perfluoropentane sulfonic acid (PFPeS) | 2706-91-4 | 0.25 µg/L | 91.8 | 50.0 | 130 |
| | | EP231X: Perfluorohexane sulfonic acid (PFHxS) | 355-46-4 | 0.25 µg/L | 103 | 50.0 | 130 |
| | | EP231X: Perfluoroheptane sulfonic acid (PFHpS) | 375-92-8 | 0.25 µg/L | 106 | 50.0 | 130 |
| | | EP231X: Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 | 0.25 µg/L | 86.8 | 50.0 | 130 |
| | | EP231X: Perfluorodecane sulfonic acid (PFDS) | 335-77-3 | 0.25 µg/L | 106 | 50.0 | 130 |



Sub-Matrix: **WATER**

| Sub-Matrix: WATER | | | | Matrix Spike (MS) Report | | | |
|---|------------------|---|-------------|--------------------------|------------------|---------------------|------|
| | | | | Spike | SpikeRecovery(%) | Recovery Limits (%) | |
| Laboratory sample ID | Client sample ID | Method: Compound | CAS Number | Concentration | MS | Low | High |
| EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2954173) | | | | | | | |
| EM2005316-003 | Anonymous | EP231X: Perfluorobutanoic acid (PFBA) | 375-22-4 | 1.25 µg/L | 107 | 50.0 | 130 |
| | | EP231X: Perfluoropentanoic acid (PFPeA) | 2706-90-3 | 0.25 µg/L | 116 | 50.0 | 130 |
| | | EP231X: Perfluorohexanoic acid (PFHxA) | 307-24-4 | 0.25 µg/L | 111 | 50.0 | 130 |
| | | EP231X: Perfluoroheptanoic acid (PFHpA) | 375-85-9 | 0.25 µg/L | 108 | 50.0 | 130 |
| | | EP231X: Perfluorooctanoic acid (PFOA) | 335-67-1 | 0.25 µg/L | 111 | 50.0 | 130 |
| | | EP231X: Perfluorononanoic acid (PFNA) | 375-95-1 | 0.25 µg/L | 113 | 50.0 | 130 |
| | | EP231X: Perfluorodecanoic acid (PFDA) | 335-76-2 | 0.25 µg/L | 101 | 50.0 | 130 |
| | | EP231X: Perfluoroundecanoic acid (PFUnDA) | 2058-94-8 | 0.25 µg/L | 106 | 50.0 | 130 |
| | | EP231X: Perfluorododecanoic acid (PFDoDA) | 307-55-1 | 0.25 µg/L | 103 | 50.0 | 130 |
| | | EP231X: Perfluorotridecanoic acid (PFTrDA) | 72629-94-8 | 0.25 µg/L | 89.2 | 50.0 | 130 |
| | | EP231X: Perfluorotetradecanoic acid (PFTeDA) | 376-06-7 | 0.625 µg/L | 113 | 50.0 | 150 |
| EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2954173) | | | | | | | |
| EM2005316-003 | Anonymous | EP231X: Perfluorooctane sulfonamide (FOSA) | 754-91-6 | 0.25 µg/L | 116 | 50.0 | 130 |
| | | EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA) | 31506-32-8 | 0.625 µg/L | 107 | 50.0 | 150 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA) | 4151-50-2 | 0.625 µg/L | 117 | 50.0 | 150 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE) | 24448-09-7 | 0.625 µg/L | 108 | 50.0 | 150 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) | 1691-99-2 | 0.625 µg/L | 108 | 50.0 | 150 |
| | | EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | 0.25 µg/L | 103 | 50.0 | 130 |
| | | EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 0.25 µg/L | 110 | 50.0 | 130 |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2954173) | | | | | | | |
| EM2005316-003 | Anonymous | EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS) | 757124-72-4 | 0.25 µg/L | 99.4 | 50.0 | 130 |
| | | EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS) | 27619-97-2 | 0.25 µg/L | 106 | 50.0 | 130 |
| | | EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS) | 39108-34-4 | 0.25 µg/L | 90.4 | 50.0 | 130 |
| | | EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS) | 120226-60-0 | 0.25 µg/L | 97.8 | 50.0 | 130 |

QA/QC Compliance Assessment to assist with Quality Review

Work Order : EM2005382

Page : 1 of 13

Amendment : 1

Client : AECOM Australia Pty Ltd

Laboratory : Environmental Division Melbourne

Contact : [REDACTED]

Telephone : +6138549 9645

Project : 60592634

Date Samples Received : 31-Mar-2020

Site : GIJPP

Issue Date : 08-Apr-2020

Sampler : [REDACTED]

No. of samples received : 9

Order number : 60592634 1.0

No. of samples analysed : 7

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Matrix Spike outliers occur.**
- Laboratory Control outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

| Compound Group Name | Laboratory Sample ID | Client Sample ID | Analyte | CAS Number | Data | Limits | Comment |
|--|----------------------|------------------|---------------------------|------------|-------|-----------|---|
| Laboratory Control Spike (LCS) Recoveries | | | | | | | |
| EP074H: Naphthalene | QC-2950265-001 | ---- | Naphthalene | 91-20-3 | 125 % | 72.3-114% | Recovery greater than upper control limit |
| EP074I: Volatile Halogenated Compounds | QC-2950265-001 | ---- | 1.1.2.2-Tetrachloroethane | 79-34-5 | 127 % | 66.1-116% | Recovery greater than upper control limit |

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

| Quality Control Sample Type | Count | | Rate (%) | | Quality Control Specification |
|-----------------------------|-------|---------|----------|----------|--------------------------------|
| Method | QC | Regular | Actual | Expected | |
| Laboratory Duplicates (DUP) | | | | | |
| TRH - Semivolatile Fraction | 1 | 20 | 5.00 | 10.00 | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | |
| TRH - Semivolatile Fraction | 0 | 20 | 0.00 | 5.00 | NEPM 2013 B3 & ALS QC Standard |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|--|---------------------------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EA001: pH in soil using 0.01M CaCl extract | | | | | | | | |
| HDPE Soil Jar (EA001)
QC05_310320 | 31-Mar-2020 | 06-Apr-2020 | 07-Apr-2020 | ✓ | 06-Apr-2020 | 06-Apr-2020 | ✓ | |
| Soil Glass Jar - Unpreserved (EA001)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 06-Apr-2020 | 07-Apr-2020 | ✓ | 06-Apr-2020 | 06-Apr-2020 | ✓ |
| EA055: Moisture Content (Dried @ 105-110°C) | | | | | | | | |
| HDPE Soil Jar (EA055)
QC05_310320 | 31-Mar-2020 | ---- | ---- | ---- | 03-Apr-2020 | 14-Apr-2020 | ✓ | |
| Soil Glass Jar - Unpreserved (EA055)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | ---- | ---- | ---- | 03-Apr-2020 | 14-Apr-2020 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---------------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EG005(ED093)T: Total Metals by ICP-AES | | | | | | | | |
| HDPE Soil Jar (EG005T)
QC05_310320 | | 31-Mar-2020 | 03-Apr-2020 | 27-Sep-2020 | ✔ | 03-Apr-2020 | 27-Sep-2020 | ✔ |
| Soil Glass Jar - Unpreserved (EG005T)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 03-Apr-2020 | 27-Sep-2020 | ✔ | 03-Apr-2020 | 27-Sep-2020 | ✔ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| HDPE Soil Jar (EG035T)
QC05_310320 | | 31-Mar-2020 | 03-Apr-2020 | 28-Apr-2020 | ✔ | 04-Apr-2020 | 28-Apr-2020 | ✔ |
| Soil Glass Jar - Unpreserved (EG035T)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 03-Apr-2020 | 28-Apr-2020 | ✔ | 04-Apr-2020 | 28-Apr-2020 | ✔ |
| EG048: Hexavalent Chromium (Alkaline Digest) | | | | | | | | |
| HDPE Soil Jar (EG048G)
QC05_310320 | | 31-Mar-2020 | 03-Apr-2020 | 28-Apr-2020 | ✔ | 03-Apr-2020 | 10-Apr-2020 | ✔ |
| Soil Glass Jar - Unpreserved (EG048G)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 03-Apr-2020 | 28-Apr-2020 | ✔ | 03-Apr-2020 | 10-Apr-2020 | ✔ |
| EK026SF: Total CN by Segmented Flow Analyser | | | | | | | | |
| HDPE Soil Jar (EK026SF)
QC05_310320 | | 31-Mar-2020 | 06-Apr-2020 | 14-Apr-2020 | ✔ | 06-Apr-2020 | 20-Apr-2020 | ✔ |
| Soil Glass Jar - Unpreserved (EK026SF)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 06-Apr-2020 | 14-Apr-2020 | ✔ | 06-Apr-2020 | 20-Apr-2020 | ✔ |
| EK040T: Fluoride Total | | | | | | | | |
| HDPE Soil Jar (EK040T)
QC05_310320 | | 31-Mar-2020 | 03-Apr-2020 | 28-Apr-2020 | ✔ | 07-Apr-2020 | 28-Apr-2020 | ✔ |
| Soil Glass Jar - Unpreserved (EK040T)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 03-Apr-2020 | 28-Apr-2020 | ✔ | 07-Apr-2020 | 28-Apr-2020 | ✔ |
| EP066: Polychlorinated Biphenyls (PCB) | | | | | | | | |
| HDPE Soil Jar (EP066-EM)
QC05_310320 | | 31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✔ | 06-Apr-2020 | 13-May-2020 | ✔ |
| Soil Glass Jar - Unpreserved (EP066-EM)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✔ | 06-Apr-2020 | 13-May-2020 | ✔ |
| EP074A: Monocyclic Aromatic Hydrocarbons | | | | | | | | |
| HDPE Soil Jar (EP074-UT)
QC05_310320 | | 31-Mar-2020 | 02-Apr-2020 | 07-Apr-2020 | ✔ | 03-Apr-2020 | 07-Apr-2020 | ✔ |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 02-Apr-2020 | 07-Apr-2020 | ✔ | 03-Apr-2020 | 07-Apr-2020 | ✔ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|---------------------------------|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP074H: Naphthalene | | | | | | | | |
| HDPE Soil Jar (EP074-UT)
QC05_310320 | | 31-Mar-2020 | 02-Apr-2020 | 07-Apr-2020 | ✓ | 03-Apr-2020 | 07-Apr-2020 | ✓ |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 02-Apr-2020 | 07-Apr-2020 | ✓ | 03-Apr-2020 | 07-Apr-2020 | ✓ |
| EP074I: Volatile Halogenated Compounds | | | | | | | | |
| HDPE Soil Jar (EP074-UT)
QC05_310320 | | 31-Mar-2020 | 02-Apr-2020 | 07-Apr-2020 | ✓ | 03-Apr-2020 | 07-Apr-2020 | ✓ |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 02-Apr-2020 | 07-Apr-2020 | ✓ | 03-Apr-2020 | 07-Apr-2020 | ✓ |
| EP075A: Phenolic Compounds (Halogenated) | | | | | | | | |
| HDPE Soil Jar (EP075-EM)
QC05_310320 | | 31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✓ | 06-Apr-2020 | 13-May-2020 | ✓ |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✓ | 06-Apr-2020 | 13-May-2020 | ✓ |
| EP075A: Phenolic Compounds (Non-halogenated) | | | | | | | | |
| HDPE Soil Jar (EP075-EM)
QC05_310320 | | 31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✓ | 06-Apr-2020 | 13-May-2020 | ✓ |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✓ | 06-Apr-2020 | 13-May-2020 | ✓ |
| EP075B: Polynuclear Aromatic Hydrocarbons | | | | | | | | |
| HDPE Soil Jar (EP075-EM)
QC05_310320 | | 31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✓ | 06-Apr-2020 | 13-May-2020 | ✓ |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✓ | 06-Apr-2020 | 13-May-2020 | ✓ |
| EP075I: Organochlorine Pesticides | | | | | | | | |
| HDPE Soil Jar (EP075-EM)
QC05_310320 | | 31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✓ | 06-Apr-2020 | 13-May-2020 | ✓ |
| Soil Glass Jar - Unpreserved (EP075-EM)
CPT002_BH55_0.1,
CPT002_BH58_0.1, | CPT002_BH56_0.1,
QC01_310320 | 31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✓ | 06-Apr-2020 | 13-May-2020 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | |
|--|--|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | |
| HDPE Soil Jar (EP074-UT)
QC05_310320 | 31-Mar-2020 | 02-Apr-2020 | 07-Apr-2020 | ✓ | 03-Apr-2020 | 07-Apr-2020 | ✓ |
| HDPE Soil Jar (EP071-EM)
QC05_310320 | 31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✓ | 06-Apr-2020 | 13-May-2020 | ✓ |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT002_BH55_0.1, CPT002_BH58_0.1, | CPT002_BH56_0.1, QC01_310320
31-Mar-2020 | 02-Apr-2020 | 07-Apr-2020 | ✓ | 03-Apr-2020 | 07-Apr-2020 | ✓ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT002_BH55_0.1, CPT002_BH58_0.1, | CPT002_BH56_0.1, QC01_310320
31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✓ | 06-Apr-2020 | 13-May-2020 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | |
| HDPE Soil Jar (EP074-UT)
QC05_310320 | 31-Mar-2020 | 02-Apr-2020 | 07-Apr-2020 | ✓ | 03-Apr-2020 | 07-Apr-2020 | ✓ |
| HDPE Soil Jar (EP071-EM)
QC05_310320 | 31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✓ | 06-Apr-2020 | 13-May-2020 | ✓ |
| Soil Glass Jar - Unpreserved (EP074-UT)
CPT002_BH55_0.1, CPT002_BH58_0.1, | CPT002_BH56_0.1, QC01_310320
31-Mar-2020 | 02-Apr-2020 | 07-Apr-2020 | ✓ | 03-Apr-2020 | 07-Apr-2020 | ✓ |
| Soil Glass Jar - Unpreserved (EP071-EM)
CPT002_BH55_0.1, CPT002_BH58_0.1, | CPT002_BH56_0.1, QC01_310320
31-Mar-2020 | 03-Apr-2020 | 14-Apr-2020 | ✓ | 06-Apr-2020 | 13-May-2020 | ✓ |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT002_BH55_0.1, CPT002_BH58_0.1, QC05_310320 | CPT002_BH56_0.1, QC01_310320,
31-Mar-2020 | 06-Apr-2020 | 27-Sep-2020 | ✓ | 06-Apr-2020 | 16-May-2020 | ✓ |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT002_BH55_0.1, CPT002_BH58_0.1, QC05_310320 | CPT002_BH56_0.1, QC01_310320,
31-Mar-2020 | 06-Apr-2020 | 27-Sep-2020 | ✓ | 06-Apr-2020 | 16-May-2020 | ✓ |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT002_BH55_0.1, CPT002_BH58_0.1, QC05_310320 | CPT002_BH56_0.1, QC01_310320,
31-Mar-2020 | 06-Apr-2020 | 27-Sep-2020 | ✓ | 06-Apr-2020 | 16-May-2020 | ✓ |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | |
| HDPE Soil Jar (EP231X)
CPT002_BH55_0.1, CPT002_BH58_0.1, QC05_310320 | CPT002_BH56_0.1, QC01_310320,
31-Mar-2020 | 06-Apr-2020 | 27-Sep-2020 | ✓ | 06-Apr-2020 | 16-May-2020 | ✓ |



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---------------------------------|------------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EP231P: PFAS Sums | | | | | | | | |
| HDPE Soil Jar (EP231X) | | | | | | | | |
| CPT002_BH55_0.1, | CPT002_BH56_0.1, | 31-Mar-2020 | 06-Apr-2020 | 27-Sep-2020 | ✔ | 06-Apr-2020 | 16-May-2020 | ✔ |
| CPT002_BH58_0.1, | QC01_310320, | | | | | | | |
| QC05_310320 | | | | | | | | |

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | Sample Date | Extraction / Preparation | | | Analysis | | | |
|---|-------------|--------------------------|--------------------|-------------|---------------|------------------|-------------|---|
| Container / Client Sample ID(s) | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation | |
| EG020T: Total Metals by ICP-MS | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)
QC03_310320, | QC04_310320 | 31-Mar-2020 | 02-Apr-2020 | 27-Sep-2020 | ✓ | 03-Apr-2020 | 27-Sep-2020 | ✓ |
| EG035T: Total Recoverable Mercury by FIMS | | | | | | | | |
| Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)
QC03_310320, | QC04_310320 | 31-Mar-2020 | ---- | ---- | ---- | 01-Apr-2020 | 28-Apr-2020 | ✓ |
| EP068A: Organochlorine Pesticides (OC) | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP068)
QC03_310320, | QC04_310320 | 31-Mar-2020 | 01-Apr-2020 | 07-Apr-2020 | ✓ | 02-Apr-2020 | 11-May-2020 | ✓ |
| EP068B: Organophosphorus Pesticides (OP) | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP068)
QC03_310320, | QC04_310320 | 31-Mar-2020 | 01-Apr-2020 | 07-Apr-2020 | ✓ | 02-Apr-2020 | 11-May-2020 | ✓ |
| EP080/071: Total Petroleum Hydrocarbons | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC03_310320, | QC04_310320 | 31-Mar-2020 | 01-Apr-2020 | 07-Apr-2020 | ✓ | 02-Apr-2020 | 11-May-2020 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC03_310320, | QC04_310320 | 31-Mar-2020 | 02-Apr-2020 | 14-Apr-2020 | ✓ | 03-Apr-2020 | 14-Apr-2020 | ✓ |
| EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions | | | | | | | | |
| Amber Glass Bottle - Unpreserved (EP071)
QC03_310320, | QC04_310320 | 31-Mar-2020 | 01-Apr-2020 | 07-Apr-2020 | ✓ | 02-Apr-2020 | 11-May-2020 | ✓ |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC03_310320, | QC04_310320 | 31-Mar-2020 | 02-Apr-2020 | 14-Apr-2020 | ✓ | 03-Apr-2020 | 14-Apr-2020 | ✓ |
| EP080: BTEXN | | | | | | | | |
| Amber VOC Vial - Sulfuric Acid (EP080)
QC03_310320, | QC04_310320 | 31-Mar-2020 | 02-Apr-2020 | 14-Apr-2020 | ✓ | 03-Apr-2020 | 14-Apr-2020 | ✓ |
| EP231A: Perfluoroalkyl Sulfonic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X)
QC03_310320, | QC04_310320 | 31-Mar-2020 | 04-Apr-2020 | 27-Sep-2020 | ✓ | 06-Apr-2020 | 27-Sep-2020 | ✓ |
| EP231B: Perfluoroalkyl Carboxylic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X)
QC03_310320, | QC04_310320 | 31-Mar-2020 | 04-Apr-2020 | 27-Sep-2020 | ✓ | 06-Apr-2020 | 27-Sep-2020 | ✓ |



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

| Method | | Sample Date | Extraction / Preparation | | | Analysis | | |
|---|--|-------------|--------------------------|--------------------|------------|---------------|------------------|------------|
| Container / Client Sample ID(s) | | | Date extracted | Due for extraction | Evaluation | Date analysed | Due for analysis | Evaluation |
| EP231C: Perfluoroalkyl Sulfonamides | | | | | | | | |
| HDPE (no PTFE) (EP231X)
QC03_310320, QC04_310320 | | 31-Mar-2020 | 04-Apr-2020 | 27-Sep-2020 | ✓ | 06-Apr-2020 | 27-Sep-2020 | ✓ |
| EP231D: (n:2) Fluorotelomer Sulfonic Acids | | | | | | | | |
| HDPE (no PTFE) (EP231X)
QC03_310320, QC04_310320 | | 31-Mar-2020 | 04-Apr-2020 | 27-Sep-2020 | ✓ | 06-Apr-2020 | 27-Sep-2020 | ✓ |
| EP231P: PFAS Sums | | | | | | | | |
| HDPE (no PTFE) (EP231X)
QC03_310320, QC04_310320 | | 31-Mar-2020 | 04-Apr-2020 | 27-Sep-2020 | ✓ | 06-Apr-2020 | 27-Sep-2020 | ✓ |



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: **✖** = Quality Control frequency not within specification ; **✓** = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | Quality Control Specification | |
|---|----------|-------|---------|----------|----------|-------------------------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | | Evaluation |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Moisture Content | EA055 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 2 | 11 | 18.18 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 9 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| pH in soil using a 0.01M CaCl2 extract | EA001 | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 2 | 11 | 18.18 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 20 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 2 | 15 | 13.33 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 7 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 9 | 11.11 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 11 | 9.09 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 40 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 15 | 6.67 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 7 | 14.29 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | 4 | 40 | 10.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|---|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Matrix Spikes (MS) - Continued | | | | | | | |
| PCB - VIC EPA 448.3 Screen | EP066-EM | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 9 | 11.11 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | 1 | 11 | 9.09 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Cyanide by Segmented Flow Analyser | EK026SF | 2 | 40 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Fluoride | EK040T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 20 | 5.00 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-AES | EG005T | 1 | 15 | 6.67 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071-EM | 1 | 7 | 14.29 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | 1 | 18 | 5.56 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--|----------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 2 | 14 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | EP068 | 1 | 4 | 25.00 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-MS - Suite A | EG020A-T | 2 | 18 | 11.11 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 20 | 5.00 | 10.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 2 | 14 | 14.29 | 10.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS) | | | | | | | |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | EP068 | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-MS - Suite A | EG020A-T | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB) | | | | | | | |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | EP068 | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-MS - Suite A | EG020A-T | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 1 | 20 | 5.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH Volatiles/BTEX | EP080 | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS) | | | | | | | |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | 1 | 14 | 7.14 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Pesticides by GCMS | EP068 | 1 | 4 | 25.00 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Mercury by FIMS | EG035T | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| Total Metals by ICP-MS - Suite A | EG020A-T | 1 | 18 | 5.56 | 5.00 | ✓ | NEPM 2013 B3 & ALS QC Standard |
| TRH - Semivolatile Fraction | EP071 | 0 | 20 | 0.00 | 5.00 | ✗ | NEPM 2013 B3 & ALS QC Standard |



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

| Quality Control Sample Type | | Count | | Rate (%) | | | Quality Control Specification |
|--------------------------------|--------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods | Method | QC | Regular | Actual | Expected | Evaluation | |
| Matrix Spikes (MS) - Continued | | | | | | | |
| TRH Volatiles/BTEX | EP080 | 1 | 14 | 7.14 | 5.00 | ✔ | NEPM 2013 B3 & ALS QC Standard |



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods | Method | Matrix | Method Descriptions |
|---|----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001 | SOIL | In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) |
| Moisture Content | EA055 | SOIL | In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 6.1 and Table 1 (14 day holding time). |
| Total Metals by ICP-AES | EG005T | SOIL | In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Mercury by FIMS | EG035T | SOIL | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Hexavalent Chromium by Alkaline Digestion and DA Finish | EG048G | SOIL | In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Cyanide by Segmented Flow Analyser | EK026SF | SOIL | In house: Referenced to APHA 4500-CN C / ASTM D7511. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM (2013) Schedule B(3) |
| Total Fluoride | EK040T | SOIL | (In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution. |
| PCB - VIC EPA 448.3 Screen | EP066-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504) |
| TRH - Semivolatile Fraction | EP071-EM | SOIL | In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. |
| Volatile Organic Compounds - Ultra-trace | EP074-UT | SOIL | In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (2013) Schedule B(3) (Method 501) |



| Analytical Methods | Method | Matrix | Method Descriptions |
|---|--------------|--------|--|
| Volatile Organic Compounds - Ultra-trace - Summations | EP074-UT-SUM | SOIL | Summation of MAHs and VHCs |
| Semivolatile Organic Compounds - Waste Classification | EP075-EM | SOIL | In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 502) |
| SVOC - Waste Classification (Sums) | EP075-EM-SUM | SOIL | Summations for EP075 (EM variation) |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | SOIL | In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements. |
| Total Metals by ICP-MS - Suite A | EG020A-T | WATER | In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector. |
| Total Mercury by FIMS | EG035T | WATER | In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| Pesticides by GCMS | EP068 | WATER | In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) |
| TRH - Semivolatile Fraction | EP071 | WATER | In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| TRH Volatiles/BTEX | EP080 | WATER | In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3) |
| Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS | EP231X | WATER | In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements. |
| Preparation Methods | Method | Matrix | Method Descriptions |
| NaOH leach for CN in Soils | CN-PR | SOIL | In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH. |



| Preparation Methods | Method | Matrix | Method Descriptions |
|--|-----------|--------|---|
| pH in soil using a 0.01M CaCl ₂ extract | EA001-PR | SOIL | In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103) |
| Alkaline digestion for Hexavalent Chromium | EG048PR | SOIL | In house: Referenced to USEPA SW846, Method 3060A. |
| Total Fluoride | EK040T-PR | SOIL | In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux. |
| Hot Block Digest for metals in soils sediments and sludges | EN69 | SOIL | In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202) |
| Methanolic Extraction of Soils - Ultra-trace. | ORG16-UT | SOIL | In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS. |
| Tumbler Extraction of Solids - VIC EPA Screen | ORG17-EM | SOIL | In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis. |
| Sample Extraction for PFAS in solid matrices | ORG73 | SOIL | In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements. |
| Digestion for Total Recoverable Metals | EN25 | WATER | In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3) |
| Separatory Funnel Extraction of Liquids | ORG14 | WATER | In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container. |
| Volatiles Water Preparation | ORG16-W | WATER | A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging. |
| Solid Phase Extraction (SPE) for PFAS in water | ORG72 | WATER | In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements. |

Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**

Contact name: [REDACTED]

Project ID: 60592634

COC number: Not provided

Turn around time: 5 Day

Date/Time received: Mar 31, 2020 12:59 PM

Eurofins reference: **711034**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : .5 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

[REDACTED] on Phone : 03 8564 5933 or by e.mail: [REDACTED]

Results will be delivered electronically via e.mail to [REDACTED]

ANZ
FQM - Generic Chain of Custody Form

AFM
Q4AN(EV)-007-FM1

| | | | | | | | | | | | |
|--|-----------|--------------------------|---------|--|-------------|---|----------|--------|------|---|--|
| CONSULTANT: KECom | | ADDRESS / OFFICE: | | SAMPLER: | | MOBILE: | | PHONE: | | Destination Laboratory
Eurofins | |
| PROJECT MANAGER (PM): | | SITE: GUFP | | P.O. NO.: | | EMAIL REPORT TO: | | | | | |
| PROJECT NUMBER & TASK COI 60592634 | | RESULTS REQUIRED (Date): | | QUOTE NO.: | | ANALYSIS REQUIRED including SUTES (note - suite codes must be listed to attract suite prices) | | | | | |
| FOR LABORATORY USE ONLY | | | | | | | | | | | |
| COOLER SEAL (circle appropriate) | | | | COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: | | | | | | | |
| Intact: Yes No N/A | | | | | | | | | | | |
| SAMPLE TEMPERATURE | | | | | | | | | | | |
| CHILLED: Yes No | | | | | | | | | | | |
| SAMPLE INFORMATION (note: S = Soil, W = Water) | | | | | | | | | | | |
| ALS ID | SAMPLE ID | MATRIX | DATE | Time | Type / Code | Total bottles | INRG G2I | | PFAS | | |
| | OC 02 | S | 3/03/20 | | 505 | 2 | X | X | | | |
| | | | | | | | HOLD | | | | |
| RELINQUISHED BY: | | | | | | | | | | | |
| Name: | | Date: | | Name: | | Date: | | Name: | | Date: | |
| Of: | | Time: | | Of: | | Time: | | Of: | | Time: | |
| RECEIVED BY: | | | | | | | | | | | |
| Name: | | Date: | | Name: | | Date: | | Name: | | Date: | |
| Of: | | Time: | | Of: | | Time: | | Of: | | Time: | |
| METHOD OF SHIPMENT | | | | | | | | | | | |
| Cont Note No: | | | | | | | | | | | |

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solts; B = Unpreserved Bag

Soil Container Codes: Jar = Unpreserved glass jar

COC Page of

0.5°C

#711034



Environment Testing

ABN – 50 005 085 521

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Phone : 0800 866 450
IANZ # 1290

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street Docklands VIC 3008
Project Name:
Project ID: 605922634

Order No.:
Report #: 711034
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Mar 31, 2020 12:59 PM
Due: Apr 7, 2020
Priority: 5 Day
Contact Name: [REDACTED]

Eurofins Analytical Services Manager : [REDACTED]

| Sample Detail | | | | | Moisture Set | Vic EPA IWRG 621 (Solids) | Per- and Polyfluoroalkyl Substances (PFASs) |
|---|-----------|--------------|---------------|--------|--------------|---------------------------|---|
| Melbourne Laboratory - NATA Site # 1254 & 14271 | | | | | X | X | |
| Sydney Laboratory - NATA Site # 18217 | | | | | | | |
| Brisbane Laboratory - NATA Site # 20794 | | | | | | | X |
| Perth Laboratory - NATA Site # 23736 | | | | | | | |
| External Laboratory | | | | | | | |
| No | Sample ID | Sample Date | Sampling Time | Matrix | LAB ID | | |
| 1 | QC02 | Mar 31, 2020 | | Soil | M20-Ma47820 | X | X |
| Test Counts | | | | | | 1 | 1 |

AECOM Aust Pty Ltd Melbourne
Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention:

Report **711034-S**
Project name
Project ID **60592634**
Received Date **Mar 31, 2020**

| | | | |
|---|-----|-------|---------------------|
| Client Sample ID | | | QC02 |
| Sample Matrix | | | Soil |
| Eurofins Sample No. | | | M20-Ma47820 |
| Date Sampled | | | Mar 31, 2020 |
| Test/Reference | LOR | Unit | |
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 |
| TRH C10-C14 | 20 | mg/kg | < 20 |
| TRH C15-C28 | 50 | mg/kg | < 50 |
| TRH C29-C36 | 50 | mg/kg | < 50 |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 |
| Volatile Organics | | | |
| 1,2,4-Trichlorobenzene | 0.5 | mg/kg | < 0.5 |
| Hexachlorobutadiene | 0.5 | mg/kg | < 0.5 |
| Volatile Organics | | | |
| 1,1-Dichloroethane | 0.5 | mg/kg | < 0.5 |
| 1,1-Dichloroethene | 0.5 | mg/kg | < 0.5 |
| 1,1,1-Trichloroethane | 0.5 | mg/kg | < 0.5 |
| 1,1,1,2-Tetrachloroethane | 0.5 | mg/kg | < 0.5 |
| 1,1,2-Trichloroethane | 0.5 | mg/kg | < 0.5 |
| 1,1,2,2-Tetrachloroethane | 0.5 | mg/kg | < 0.5 |
| 1,2-Dibromoethane | 0.5 | mg/kg | < 0.5 |
| 1,2-Dichlorobenzene | 0.5 | mg/kg | < 0.5 |
| 1,2-Dichloroethane | 0.5 | mg/kg | < 0.5 |
| 1,2-Dichloropropane | 0.5 | mg/kg | < 0.5 |
| 1,2,3-Trichloropropane | 0.5 | mg/kg | < 0.5 |
| 1,2,4-Trimethylbenzene | 0.5 | mg/kg | < 0.5 |
| 1,3-Dichlorobenzene | 0.5 | mg/kg | < 0.5 |
| 1,3-Dichloropropane | 0.5 | mg/kg | < 0.5 |
| 1,3,5-Trimethylbenzene | 0.5 | mg/kg | < 0.5 |
| 1,4-Dichlorobenzene | 0.5 | mg/kg | < 0.5 |
| 2-Butanone (MEK) | 0.5 | mg/kg | < 0.5 |
| 2-Propanone (Acetone) | 0.5 | mg/kg | < 0.5 |
| 4-Chlorotoluene | 0.5 | mg/kg | < 0.5 |
| 4-Methyl-2-pentanone (MIBK) | 0.5 | mg/kg | < 0.5 |
| Allyl chloride | 0.5 | mg/kg | < 0.5 |
| Benzene | 0.1 | mg/kg | < 0.1 |
| Bromobenzene | 0.5 | mg/kg | < 0.5 |
| Bromochloromethane | 0.5 | mg/kg | < 0.5 |
| Bromodichloromethane | 0.5 | mg/kg | < 0.5 |
| Bromoform | 0.5 | mg/kg | < 0.5 |

| | | | |
|---|-----|-------|---------------------|
| Client Sample ID | | | QC02 |
| Sample Matrix | | | Soil |
| Eurofins Sample No. | | | M20-Ma47820 |
| Date Sampled | | | Mar 31, 2020 |
| Test/Reference | LOR | Unit | |
| Volatile Organics | | | |
| Bromomethane | 0.5 | mg/kg | < 0.5 |
| Carbon disulfide | 0.5 | mg/kg | < 0.5 |
| Carbon Tetrachloride | 0.5 | mg/kg | < 0.5 |
| Chlorobenzene | 0.5 | mg/kg | < 0.5 |
| Chloroethane | 0.5 | mg/kg | < 0.5 |
| Chloroform | 0.5 | mg/kg | < 0.5 |
| Chloromethane | 0.5 | mg/kg | < 0.5 |
| cis-1.2-Dichloroethene | 0.5 | mg/kg | < 0.5 |
| cis-1.3-Dichloropropene | 0.5 | mg/kg | < 0.5 |
| Dibromochloromethane | 0.5 | mg/kg | < 0.5 |
| Dibromomethane | 0.5 | mg/kg | < 0.5 |
| Dichlorodifluoromethane | 0.5 | mg/kg | < 0.5 |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 |
| Iodomethane | 0.5 | mg/kg | < 0.5 |
| Isopropyl benzene (Cumene) | 0.5 | mg/kg | < 0.5 |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 |
| Methylene Chloride | 0.5 | mg/kg | < 0.5 |
| o-Xylene | 0.1 | mg/kg | < 0.1 |
| Styrene | 0.5 | mg/kg | < 0.5 |
| Tetrachloroethene | 0.5 | mg/kg | < 0.5 |
| Toluene | 0.1 | mg/kg | < 0.1 |
| trans-1.2-Dichloroethene | 0.5 | mg/kg | < 0.5 |
| trans-1.3-Dichloropropene | 0.5 | mg/kg | < 0.5 |
| Trichloroethene | 0.5 | mg/kg | < 0.5 |
| Trichlorofluoromethane | 0.5 | mg/kg | < 0.5 |
| Vinyl chloride | 0.5 | mg/kg | < 0.5 |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 |
| Total MAH* | 0.5 | mg/kg | < 0.5 |
| Vic EPA IWRG 621 CHC (Total)* | 0.5 | mg/kg | < 0.5 |
| Vic EPA IWRG 621 Other CHC (Total)* | 0.5 | mg/kg | < 0.5 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 58 |
| Toluene-d8 (surr.) | 1 | % | 53 |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | | | |
| Naphthalene ^{N02} | 0.5 | mg/kg | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | < 20 |
| TRH C6-C10 less BTEX (F1) ^{N04} | 20 | mg/kg | < 20 |
| TRH >C10-C16 | 50 | mg/kg | < 50 |
| TRH >C10-C16 less Naphthalene (F2) ^{N01} | 50 | mg/kg | < 50 |
| TRH >C16-C34 | 100 | mg/kg | < 100 |
| TRH >C34-C40 | 100 | mg/kg | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 |
| Polycyclic Aromatic Hydrocarbons | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 |
| Benzo(a)pyrene TEQ (medium bound) * | 0.5 | mg/kg | 0.6 |
| Benzo(a)pyrene TEQ (upper bound) * | 0.5 | mg/kg | 1.2 |
| Acenaphthene | 0.5 | mg/kg | < 0.5 |
| Acenaphthylene | 0.5 | mg/kg | < 0.5 |
| Anthracene | 0.5 | mg/kg | < 0.5 |
| Benz(a)anthracene | 0.5 | mg/kg | < 0.5 |

| | | | |
|---|------|-------|---------------------|
| Client Sample ID | | | QC02 |
| Sample Matrix | | | Soil |
| Eurofins Sample No. | | | M20-Ma47820 |
| Date Sampled | | | Mar 31, 2020 |
| Test/Reference | LOR | Unit | |
| Polycyclic Aromatic Hydrocarbons | | | |
| Benzo(a)pyrene | 0.5 | mg/kg | < 0.5 |
| Benzo(b&j)fluoranthene ^{N07} | 0.5 | mg/kg | < 0.5 |
| Benzo(g,h,i)perylene | 0.5 | mg/kg | < 0.5 |
| Benzo(k)fluoranthene | 0.5 | mg/kg | < 0.5 |
| Chrysene | 0.5 | mg/kg | < 0.5 |
| Dibenz(a,h)anthracene | 0.5 | mg/kg | < 0.5 |
| Fluoranthene | 0.5 | mg/kg | < 0.5 |
| Fluorene | 0.5 | mg/kg | < 0.5 |
| Indeno(1,2,3-cd)pyrene | 0.5 | mg/kg | < 0.5 |
| Naphthalene | 0.5 | mg/kg | < 0.5 |
| Phenanthrene | 0.5 | mg/kg | < 0.5 |
| Pyrene | 0.5 | mg/kg | < 0.5 |
| Total PAH* | 0.5 | mg/kg | < 0.5 |
| 2-Fluorobiphenyl (surr.) | 1 | % | 96 |
| p-Terphenyl-d14 (surr.) | 1 | % | 63 |
| Organochlorine Pesticides | | | |
| Chlordanes - Total | 0.1 | mg/kg | < 0.1 |
| 4,4'-DDD | 0.05 | mg/kg | < 0.05 |
| 4,4'-DDE | 0.05 | mg/kg | < 0.05 |
| 4,4'-DDT | 0.05 | mg/kg | < 0.05 |
| a-BHC | 0.05 | mg/kg | < 0.05 |
| Aldrin | 0.05 | mg/kg | < 0.05 |
| b-BHC | 0.05 | mg/kg | < 0.05 |
| d-BHC | 0.05 | mg/kg | < 0.05 |
| Dieldrin | 0.05 | mg/kg | < 0.05 |
| Endosulfan I | 0.05 | mg/kg | < 0.05 |
| Endosulfan II | 0.05 | mg/kg | < 0.05 |
| Endosulfan sulphate | 0.05 | mg/kg | < 0.05 |
| Endrin | 0.05 | mg/kg | < 0.05 |
| Endrin aldehyde | 0.05 | mg/kg | < 0.05 |
| Endrin ketone | 0.05 | mg/kg | < 0.05 |
| g-BHC (Lindane) | 0.05 | mg/kg | < 0.05 |
| Heptachlor | 0.05 | mg/kg | < 0.05 |
| Heptachlor epoxide | 0.05 | mg/kg | < 0.05 |
| Hexachlorobenzene | 0.05 | mg/kg | < 0.05 |
| Methoxychlor | 0.05 | mg/kg | < 0.05 |
| Toxaphene | 1 | mg/kg | < 1 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 |
| Dibutylchloroendate (surr.) | 1 | % | 91 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 84 |
| Polychlorinated Biphenyls | | | |
| Aroclor-1016 | 0.1 | mg/kg | < 0.1 |
| Aroclor-1221 | 0.1 | mg/kg | < 0.1 |
| Aroclor-1232 | 0.1 | mg/kg | < 0.1 |
| Aroclor-1242 | 0.1 | mg/kg | < 0.1 |
| Aroclor-1248 | 0.1 | mg/kg | < 0.1 |

| | | | |
|--|-----|----------|---------------------|
| Client Sample ID | | | QC02 |
| Sample Matrix | | | Soil |
| Eurofins Sample No. | | | M20-Ma47820 |
| Date Sampled | | | Mar 31, 2020 |
| Test/Reference | LOR | Unit | |
| Polychlorinated Biphenyls | | | |
| Aroclor-1254 | 0.1 | mg/kg | < 0.1 |
| Aroclor-1260 | 0.1 | mg/kg | < 0.1 |
| Total PCB* | 0.1 | mg/kg | < 0.1 |
| Dibutylchloredate (surr.) | 1 | % | 91 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 84 |
| Phenols (Halogenated) | | | |
| 2-Chlorophenol | 0.5 | mg/kg | < 0.5 |
| 2,4-Dichlorophenol | 0.5 | mg/kg | < 0.5 |
| 2,4,5-Trichlorophenol | 1 | mg/kg | < 1 |
| 2,4,6-Trichlorophenol | 1 | mg/kg | < 1 |
| 2,6-Dichlorophenol | 0.5 | mg/kg | < 0.5 |
| 4-Chloro-3-methylphenol | 1 | mg/kg | < 1 |
| Pentachlorophenol | 1 | mg/kg | < 1 |
| Tetrachlorophenols - Total | 10 | mg/kg | < 10 |
| Total Halogenated Phenol* | 1 | mg/kg | < 1 |
| Phenols (non-Halogenated) | | | |
| 2-Cyclohexyl-4,6-dinitrophenol | 20 | mg/kg | < 20 |
| 2-Methyl-4,6-dinitrophenol | 5 | mg/kg | < 5 |
| 2-Methylphenol (o-Cresol) | 0.2 | mg/kg | < 0.2 |
| 2-Nitrophenol | 1.0 | mg/kg | < 1 |
| 2,4-Dimethylphenol | 0.5 | mg/kg | < 0.5 |
| 2,4-Dinitrophenol | 5 | mg/kg | < 5 |
| 3&4-Methylphenol (m&p-Cresol) | 0.4 | mg/kg | < 0.4 |
| 4-Nitrophenol | 5 | mg/kg | < 5 |
| Dinoseb | 20 | mg/kg | < 20 |
| Phenol | 0.5 | mg/kg | < 0.5 |
| Total Non-Halogenated Phenol* | 20 | mg/kg | < 20 |
| Phenol-d6 (surr.) | 1 | % | 48 |
| | | | |
| Chromium (hexavalent) | 1 | mg/kg | < 1 |
| Cyanide (total) | 5 | mg/kg | < 5 |
| Fluoride (Total) | 100 | mg/kg | 470 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | 6.7 |
| % Moisture | 1 | % | 15 |
| Heavy Metals | | | |
| Arsenic | 2 | mg/kg | 11 |
| Cadmium | 0.4 | mg/kg | < 0.4 |
| Chromium | 5 | mg/kg | 69 |
| Copper | 5 | mg/kg | 9.6 |
| Lead | 5 | mg/kg | 19 |
| Mercury | 0.1 | mg/kg | < 0.1 |
| Molybdenum | 5 | mg/kg | < 5 |
| Nickel | 5 | mg/kg | 11 |
| Selenium | 2 | mg/kg | < 2 |
| Silver | 0.2 | mg/kg | < 0.2 |
| Tin | 10 | mg/kg | < 10 |
| Zinc | 5 | mg/kg | 28 |

| | | | |
|--|-----|-------|---------------------|
| Client Sample ID | | | QC02 |
| Sample Matrix | | | Soil |
| Eurofins Sample No. | | | M20-Ma47820 |
| Date Sampled | | | Mar 31, 2020 |
| Test/Reference | LOR | Unit | |
| Perfluoroalkyl carboxylic acids (PFCAs) | | | |
| Perfluorobutanoic acid (PFBA) ^{N11} | 5 | ug/kg | < 5 |
| Perfluoropentanoic acid (PFPeA) ^{N11} | 5 | ug/kg | < 5 |
| Perfluorohexanoic acid (PFHxA) ^{N11} | 5 | ug/kg | < 5 |
| Perfluoroheptanoic acid (PFHpA) ^{N11} | 5 | ug/kg | < 5 |
| Perfluorooctanoic acid (PFOA) ^{N11} | 5 | ug/kg | < 5 |
| Perfluorononanoic acid (PFNA) ^{N11} | 5 | ug/kg | < 5 |
| Perfluorodecanoic acid (PFDA) ^{N11} | 5 | ug/kg | < 5 |
| Perfluoroundecanoic acid (PFUnDA) ^{N11} | 5 | ug/kg | < 5 |
| Perfluorododecanoic acid (PFDoDA) ^{N11} | 5 | ug/kg | < 5 |
| Perfluorotridecanoic acid (PFTeDA) ^{N15} | 5 | ug/kg | < 5 |
| Perfluorotetradecanoic acid (PFTeDA) ^{N11} | 5 | ug/kg | < 5 |
| 13C4-PFBA (surr.) | 1 | % | 65 |
| 13C5-PFPeA (surr.) | 1 | % | 72 |
| 13C5-PFHxA (surr.) | 1 | % | 73 |
| 13C4-PFHpA (surr.) | 1 | % | 67 |
| 13C8-PFOA (surr.) | 1 | % | 65 |
| 13C5-PFNA (surr.) | 1 | % | 78 |
| 13C6-PFDA (surr.) | 1 | % | 96 |
| 13C2-PFUnDA (surr.) | 1 | % | 102 |
| 13C2-PFDoDA (surr.) | 1 | % | 92 |
| 13C2-PFTeDA (surr.) | 1 | % | 102 |
| Perfluoroalkyl sulfonamido substances | | | |
| Perfluorooctane sulfonamide (FOSA) ^{N11} | 5 | ug/kg | < 5 |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11} | 5 | ug/kg | < 5 |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11} | 5 | ug/kg | < 5 |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) ^{N11} | 5 | ug/kg | < 5 |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) ^{N11} | 5 | ug/kg | < 5 |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11} | 10 | ug/kg | < 10 |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11} | 10 | ug/kg | < 10 |
| 13C8-FOSA (surr.) | 1 | % | 64 |
| D3-N-MeFOSA (surr.) | 1 | % | 86 |
| D5-N-EtFOSA (surr.) | 1 | % | 97 |
| D7-N-MeFOSE (surr.) | 1 | % | 71 |
| D9-N-EtFOSE (surr.) | 1 | % | 68 |
| D5-N-EtFOSAA (surr.) | 1 | % | 43 |
| D3-N-MeFOSAA (surr.) | 1 | % | 34 |
| Perfluoroalkyl sulfonic acids (PFSAs) | | | |
| Perfluorobutanesulfonic acid (PFBS) ^{N11} | 5 | ug/kg | < 5 |
| Perfluorononanesulfonic acid (PFNS) ^{N15} | 5 | ug/kg | < 5 |
| Perfluoropropanesulfonic acid (PFPrS) ^{N15} | 5 | ug/kg | < 5 |
| Perfluoropentanesulfonic acid (PFPeS) ^{N15} | 5 | ug/kg | < 5 |
| Perfluorohexanesulfonic acid (PFHxS) ^{N11} | 5 | ug/kg | < 5 |
| Perfluoroheptanesulfonic acid (PFHpS) ^{N15} | 5 | ug/kg | < 5 |
| Perfluorooctanesulfonic acid (PFOS) ^{N11} | 5 | ug/kg | < 5 |
| Perfluorodecanesulfonic acid (PFDS) ^{N15} | 5 | ug/kg | < 5 |
| 13C3-PFBS (surr.) | 1 | % | 81 |

| | | | |
|---|-----|-------|---------------------|
| Client Sample ID | | | QC02 |
| Sample Matrix | | | Soil |
| Eurofins Sample No. | | | M20-Ma47820 |
| Date Sampled | | | Mar 31, 2020 |
| Test/Reference | LOR | Unit | |
| Perfluoroalkyl sulfonic acids (PFASs) | | | |
| 18O2-PFHxS (surr.) | 1 | % | 83 |
| 13C8-PFOS (surr.) | 1 | % | 83 |
| n:2 Fluorotelomer sulfonic acids (n:2 FTSA) | | | |
| 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11} | 5 | ug/kg | < 5 |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11} | 10 | ug/kg | < 10 |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11} | 5 | ug/kg | < 5 |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N11} | 5 | ug/kg | < 5 |
| 13C2-4:2 FTSA (surr.) | 1 | % | 76 |
| 13C2-6:2 FTSA (surr.) | 1 | % | 60 |
| 13C2-8:2 FTSA (surr.) | 1 | % | 85 |
| 13C2-10:2 FTSA (surr.) | 1 | % | 61 |
| PFASs Summations | | | |
| Sum (PFHxS + PFOS)* | 5 | ug/kg | < 5 |
| Sum of US EPA PFAS (PFOS + PFOA)* | 5 | ug/kg | < 5 |
| Sum of enHealth PFAS (PFHxS + PFOS + PFOA)* | 5 | ug/kg | < 5 |
| Sum of WA DWER PFAS (n=10)* | 10 | ug/kg | < 10 |
| Sum of PFASs (n=30)* | 50 | ug/kg | < 50 |

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

| Description | Testing Site | Extracted | Holding Time |
|---|--------------|--------------|--------------|
| Vic EPA IWRG 621 (Solids) | | | |
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | Melbourne | Apr 01, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Volatile Organics | Melbourne | Apr 01, 2020 | 7 Days |
| - Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS | | | |
| Volatile Organics | Melbourne | Apr 01, 2020 | 7 Days |
| - Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260) | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Melbourne | Apr 01, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Melbourne | Apr 01, 2020 | |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Polycyclic Aromatic Hydrocarbons | Melbourne | Apr 01, 2020 | 14 Days |
| - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water | | | |
| Organochlorine Pesticides | Melbourne | Apr 01, 2020 | 14 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270) | | | |
| Polychlorinated Biphenyls | Melbourne | Apr 01, 2020 | 28 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082) | | | |
| Phenols (Halogenated) | Melbourne | Apr 01, 2020 | 14 Days |
| - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water | | | |
| Phenols (non-Halogenated) | Melbourne | Apr 01, 2020 | 14 Days |
| - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water | | | |
| Chromium (hexavalent) | Melbourne | Apr 01, 2020 | 28 Days |
| - Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060) | | | |
| Cyanide (total) | Melbourne | Apr 01, 2020 | 14 Days |
| - Method: LTM-INO-4020 Total Free WAD Cyanide by CFA | | | |
| Fluoride (Total) | Melbourne | Apr 02, 2020 | 28 Days |
| - Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE | | | |
| pH (1:5 Aqueous extract at 25°C as rec.) | Melbourne | Apr 01, 2020 | 7 Days |
| - Method: LTM-GEN-7090 pH in soil by ISE | | | |
| Metals IWRG 621 : Metals M12 | Melbourne | Apr 01, 2020 | 28 Days |
| - Method: | | | |
| % Moisture | Melbourne | Mar 31, 2020 | 14 Days |
| - Method: LTM-GEN-7080 Moisture | | | |
| Per- and Polyfluoroalkyl Substances (PFASs) | | | |
| Perfluoroalkyl carboxylic acids (PFCAs) | Brisbane | Apr 01, 2020 | 180 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| Perfluoroalkyl sulfonamido substances | Brisbane | Apr 01, 2020 | 180 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| Perfluoroalkyl sulfonic acids (PFASs) | Brisbane | Apr 01, 2020 | 180 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |
| n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) | Brisbane | Apr 01, 2020 | 180 Days |
| - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) | | | |

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

| | |
|-------------------------|--|
| Dry | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| LOR | Limit of Reporting. |
| SPIKE | Addition of the analyte to the sample and reported as percentage recovery. |
| RPD | Relative Percent Difference between two Duplicate pieces of analysis. |
| LCS | Laboratory Control Sample - reported as percent recovery. |
| CRM | Certified Reference Material - reported as percent recovery. |
| Method Blank | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| Surr - Surrogate | The addition of a like compound to the analyte target and reported as percentage recovery. |
| Duplicate | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| USEPA | United States Environmental Protection Agency |
| APHA | American Public Health Association |
| TCLP | Toxicity Characteristic Leaching Procedure |
| COC | Chain of Custody |
| SRA | Sample Receipt Advice |
| QSM | US Department of Defense Quality Systems Manual Version 5.3 |
| CP | Client Parent - QC was performed on samples pertaining to this report |
| NC | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| TEQ | Toxic Equivalency Quotient |

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

| Test | Lab Sample ID | QA Source | Units | Result 1 | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---------------|-----------|-------|----------|--|-------------------|-------------|-----------------|
| Spike - % Recovery | | | | | | | | |
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | | | | Result 1 | | | | |
| TRH C6-C9 | M20-Ma48573 | NCP | % | 80 | | 70-130 | Pass | |
| TRH C10-C14 | M20-Ap01148 | NCP | % | 108 | | 70-130 | Pass | |
| Spike - % Recovery | | | | | | | | |
| Organochlorine Pesticides | | | | Result 1 | | | | |
| Chlordanes - Total | M20-Ma47068 | NCP | % | 96 | | 70-130 | Pass | |
| 4,4'-DDD | M20-Ma47068 | NCP | % | 87 | | 70-130 | Pass | |
| 4,4'-DDE | M20-Ma47068 | NCP | % | 114 | | 70-130 | Pass | |
| 4,4'-DDT | M20-Ma47068 | NCP | % | 73 | | 70-130 | Pass | |
| a-BHC | M20-Ma47068 | NCP | % | 105 | | 70-130 | Pass | |
| Aldrin | M20-Ma47068 | NCP | % | 109 | | 70-130 | Pass | |
| b-BHC | M20-Ma47068 | NCP | % | 116 | | 70-130 | Pass | |
| d-BHC | M20-Ma47068 | NCP | % | 77 | | 70-130 | Pass | |
| Dieldrin | M20-Ma47068 | NCP | % | 88 | | 70-130 | Pass | |
| Endosulfan I | M20-Ma47068 | NCP | % | 99 | | 70-130 | Pass | |
| Endosulfan II | M20-Ma47068 | NCP | % | 93 | | 70-130 | Pass | |
| Endosulfan sulphate | M20-Ma47068 | NCP | % | 91 | | 70-130 | Pass | |
| Endrin | M20-Ma47068 | NCP | % | 93 | | 70-130 | Pass | |
| Endrin aldehyde | M20-Ma47068 | NCP | % | 105 | | 70-130 | Pass | |
| Endrin ketone | M20-Ma47068 | NCP | % | 93 | | 70-130 | Pass | |
| g-BHC (Lindane) | M20-Ma47068 | NCP | % | 104 | | 70-130 | Pass | |
| Heptachlor | M20-Ma47068 | NCP | % | 81 | | 70-130 | Pass | |
| Heptachlor epoxide | M20-Ma47068 | NCP | % | 93 | | 70-130 | Pass | |
| Hexachlorobenzene | M20-Ma47068 | NCP | % | 88 | | 70-130 | Pass | |
| Methoxychlor | M20-Ma47068 | NCP | % | 87 | | 70-130 | Pass | |
| Spike - % Recovery | | | | | | | | |
| Polychlorinated Biphenyls | | | | Result 1 | | | | |
| Aroclor-1016 | B20-Ma45669 | NCP | % | 89 | | 70-130 | Pass | |
| Aroclor-1260 | B20-Ma45669 | NCP | % | 91 | | 70-130 | Pass | |
| Spike - % Recovery | | | | | | | | |
| | | | | Result 1 | | | | |
| Chromium (hexavalent) | M20-Ap00180 | NCP | % | 99 | | 70-130 | Pass | |
| Cyanide (total) | M20-Ma48633 | NCP | % | 82 | | 70-130 | Pass | |
| Fluoride (Total) | M20-Fe33284 | NCP | % | 114 | | 70-130 | Pass | |
| Spike - % Recovery | | | | | | | | |
| Heavy Metals | | | | Result 1 | | | | |
| Arsenic | M20-Ma45810 | NCP | % | 86 | | 75-125 | Pass | |
| Cadmium | M20-Ap04514 | NCP | % | 88 | | 75-125 | Pass | |
| Chromium | M20-Ap04514 | NCP | % | 96 | | 75-125 | Pass | |
| Copper | M20-Ap04514 | NCP | % | 82 | | 75-125 | Pass | |
| Lead | M20-Ap04514 | NCP | % | 88 | | 75-125 | Pass | |
| Mercury | M20-Ap04514 | NCP | % | 79 | | 70-130 | Pass | |
| Molybdenum | M20-Ap04514 | NCP | % | 88 | | 75-125 | Pass | |
| Nickel | M20-Ap04514 | NCP | % | 90 | | 75-125 | Pass | |
| Selenium | M20-Ap04514 | NCP | % | 89 | | 75-125 | Pass | |
| Silver | M20-Ap04514 | NCP | % | 74 | | 75-125 | Fail | Q08 |
| Tin | M20-Ap04514 | NCP | % | 92 | | 75-125 | Pass | |
| Zinc | M20-Ap04514 | NCP | % | 82 | | 75-125 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | Result 2 | RPD | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---------------|-----------|-------|----------|----------|-----|-------------------|-------------|-----------------|
| Duplicate | | | | | | | | | |
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | M20-Ma46890 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH C10-C14 | M20-Ap01147 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH C15-C28 | M20-Ap01147 | NCP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH C29-C36 | M20-Ap01147 | NCP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| Duplicate | | | | | | | | | |
| Volatile Organics | | | | Result 1 | Result 2 | RPD | | | |
| 1.2.4-Trichlorobenzene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Hexachlorobutadiene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Duplicate | | | | | | | | | |
| Volatile Organics | | | | Result 1 | Result 2 | RPD | | | |
| 1.1-Dichloroethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.1-Dichloroethene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.1.1-Trichloroethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.1.1.2-Tetrachloroethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.1.2-Trichloroethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.1.2.2-Tetrachloroethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.2-Dibromoethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.2-Dichlorobenzene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.2-Dichloroethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.2-Dichloropropane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.2.3-Trichloropropane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.2.4-Trimethylbenzene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.3-Dichlorobenzene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.3-Dichloropropane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.3.5-Trimethylbenzene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 1.4-Dichlorobenzene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 2-Butanone (MEK) | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 2-Propanone (Acetone) | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 4-Chlorotoluene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| 4-Methyl-2-pentanone (MIBK) | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Allyl chloride | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzene | M20-Ma46890 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Bromobenzene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Bromochloromethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Bromodichloromethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Bromoform | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Bromomethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Carbon disulfide | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Carbon Tetrachloride | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Chlorobenzene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Chloroethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Chloroform | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Chloromethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| cis-1.2-Dichloroethene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| cis-1.3-Dichloropropene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Dibromochloromethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Dibromomethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Dichlorodifluoromethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Ethylbenzene | M20-Ma46890 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Iodomethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Isopropyl benzene (Cumene) | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| m&p-Xylenes | M20-Ma46890 | NCP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |

| Duplicate | | | | | | | | |
|--|-------------|-----|-------|----------|----------|-----|-----|------|
| Volatile Organics | | | | Result 1 | Result 2 | RPD | | |
| Methylene Chloride | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| o-Xylene | M20-Ma46890 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass |
| Styrene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Tetrachloroethene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Toluene | M20-Ma46890 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass |
| trans-1,2-Dichloroethene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| trans-1,3-Dichloropropene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Trichloroethene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Trichlorofluoromethane | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Vinyl chloride | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Xylenes - Total* | M20-Ma46890 | NCP | mg/kg | < 0.3 | < 0.3 | <1 | 30% | Pass |
| Duplicate | | | | | | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | | | | Result 1 | Result 2 | RPD | | |
| Naphthalene | M20-Ma46890 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| TRH C6-C10 | M20-Ma46890 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass |
| TRH >C10-C16 | M20-Ap01147 | NCP | mg/kg | < 50 | < 50 | <1 | 30% | Pass |
| TRH >C16-C34 | M20-Ap01147 | NCP | mg/kg | < 100 | < 100 | <1 | 30% | Pass |
| TRH >C34-C40 | M20-Ap01147 | NCP | mg/kg | < 100 | < 100 | <1 | 30% | Pass |
| Duplicate | | | | | | | | |
| Polycyclic Aromatic Hydrocarbons | | | | Result 1 | Result 2 | RPD | | |
| Acenaphthene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Acenaphthylene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Anthracene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Benz(a)anthracene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Benzo(a)pyrene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Benzo(b&j)fluoranthene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Benzo(g,h,i)perylene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Benzo(k)fluoranthene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Chrysene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Dibenz(a,h)anthracene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Fluoranthene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Fluorene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Indeno(1,2,3-cd)pyrene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Naphthalene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Phenanthrene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Pyrene | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Duplicate | | | | | | | | |
| Organochlorine Pesticides | | | | Result 1 | Result 2 | RPD | | |
| Chlordanes - Total | M20-Ma48457 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass |
| 4,4'-DDD | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| 4,4'-DDE | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| 4,4'-DDT | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| a-BHC | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| Aldrin | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| b-BHC | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| d-BHC | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| Dieldrin | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| Endosulfan I | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| Endosulfan II | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| Endosulfan sulphate | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| Endrin | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| Endrin aldehyde | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| Endrin ketone | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| g-BHC (Lindane) | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |

| Duplicate | | | | | | | | |
|--|-------------|-----|----------|----------|----------|------|-----|------|
| Organochlorine Pesticides | | | | Result 1 | Result 2 | RPD | | |
| Heptachlor | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| Heptachlor epoxide | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| Hexachlorobenzene | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| Methoxychlor | M20-Ma48457 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass |
| Duplicate | | | | | | | | |
| Polychlorinated Biphenyls | | | | Result 1 | Result 2 | RPD | | |
| Aroclor-1016 | M20-Ap03249 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass |
| Aroclor-1221 | M20-Ap03249 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass |
| Aroclor-1232 | M20-Ap03249 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass |
| Aroclor-1242 | M20-Ap03249 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass |
| Aroclor-1248 | M20-Ap03249 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass |
| Aroclor-1254 | M20-Ap03249 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass |
| Aroclor-1260 | M20-Ap03249 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass |
| Total PCB* | M20-Ap03249 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass |
| Duplicate | | | | | | | | |
| Phenols (Halogenated) | | | | Result 1 | Result 2 | RPD | | |
| 2-Chlorophenol | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| 2,4-Dichlorophenol | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| 2,4,5-Trichlorophenol | M20-Ma48457 | NCP | mg/kg | < 1 | < 1 | <1 | 30% | Pass |
| 2,4,6-Trichlorophenol | M20-Ma48457 | NCP | mg/kg | < 1 | < 1 | <1 | 30% | Pass |
| 2,6-Dichlorophenol | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| 4-Chloro-3-methylphenol | M20-Ma48457 | NCP | mg/kg | < 1 | < 1 | <1 | 30% | Pass |
| Pentachlorophenol | M20-Ma48457 | NCP | mg/kg | < 1 | < 1 | <1 | 30% | Pass |
| Tetrachlorophenols - Total | M20-Ma48457 | NCP | mg/kg | < 10 | < 10 | <1 | 30% | Pass |
| Duplicate | | | | | | | | |
| Phenols (non-Halogenated) | | | | Result 1 | Result 2 | RPD | | |
| 2-Cyclohexyl-4,6-dinitrophenol | M20-Ma48457 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass |
| 2-Methyl-4,6-dinitrophenol | M20-Ma48457 | NCP | mg/kg | < 5 | < 5 | <1 | 30% | Pass |
| 2-Methylphenol (o-Cresol) | M20-Ma48457 | NCP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass |
| 2-Nitrophenol | M20-Ma48457 | NCP | mg/kg | < 1 | < 1 | <1 | 30% | Pass |
| 2,4-Dimethylphenol | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| 2,4-Dinitrophenol | M20-Ma48457 | NCP | mg/kg | < 5 | < 5 | <1 | 30% | Pass |
| 3&4-Methylphenol (m&p-Cresol) | M20-Ma48457 | NCP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass |
| 4-Nitrophenol | M20-Ma48457 | NCP | mg/kg | < 5 | < 5 | <1 | 30% | Pass |
| Dinoseb | M20-Ma48457 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass |
| Phenol | M20-Ma48457 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass |
| Duplicate | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | |
| Chromium (hexavalent) | M20-Ma47820 | CP | mg/kg | < 1 | < 1 | <1 | 30% | Pass |
| Cyanide (total) | M20-Ma48623 | NCP | mg/kg | < 5 | < 5 | <1 | 30% | Pass |
| Fluoride (Total) | M20-Ma41412 | NCP | mg/kg | 330 | 460 | 33 | 30% | Fail |
| pH (1:5 Aqueous extract at 25°C as rec.) | S20-Ap01055 | NCP | pH Units | 7.1 | 6.9 | pass | 30% | Pass |
| % Moisture | M20-Ma47803 | NCP | % | 85 | 85 | <1 | 30% | Pass |
| Duplicate | | | | | | | | |
| Heavy Metals | | | | Result 1 | Result 2 | RPD | | |
| Arsenic | M20-Ma45810 | NCP | mg/kg | 15 | 15 | <1 | 30% | Pass |
| Cadmium | M20-Ma45810 | NCP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass |
| Chromium | M20-Ma45810 | NCP | mg/kg | 100 | 100 | <1 | 30% | Pass |
| Copper | M20-Ma45810 | NCP | mg/kg | < 5 | < 5 | <1 | 30% | Pass |
| Lead | M20-Ma45810 | NCP | mg/kg | 14 | 14 | 1.0 | 30% | Pass |
| Mercury | M20-Ma45810 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass |
| Molybdenum | M20-Ma45810 | NCP | mg/kg | < 5 | < 5 | <1 | 30% | Pass |
| Nickel | M20-Ma45810 | NCP | mg/kg | < 5 | < 5 | <1 | 30% | Pass |

| Duplicate | | | | | | | | |
|---|-------------|-----|-------|----------|----------|-----|-----|------|
| Heavy Metals | | | | Result 1 | Result 2 | RPD | | |
| Selenium | M20-Ma45810 | NCP | mg/kg | < 2 | < 2 | <1 | 30% | Pass |
| Silver | M20-Ma45810 | NCP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass |
| Tin | M20-Ma45810 | NCP | mg/kg | < 10 | < 10 | <1 | 30% | Pass |
| Zinc | M20-Ma45810 | NCP | mg/kg | 38 | 38 | <1 | 30% | Pass |
| Duplicate | | | | | | | | |
| Perfluoroalkyl carboxylic acids (PFCAs) | | | | Result 1 | Result 2 | RPD | | |
| Perfluorobutanoic acid (PFBA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluoropentanoic acid (PFPeA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluorohexanoic acid (PFHxA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluoroheptanoic acid (PFHpA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluorooctanoic acid (PFOA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluorononanoic acid (PFNA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluorodecanoic acid (PFDA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluoroundecanoic acid (PFUnDA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluorododecanoic acid (PFDoDA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluorotridecanoic acid (PFTrDA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluorotetradecanoic acid (PFTeDA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Duplicate | | | | | | | | |
| Perfluoroalkyl sulfonamido substances | | | | Result 1 | Result 2 | RPD | | |
| Perfluorooctane sulfonamide (FOSA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) | M20-Ma48142 | NCP | ug/kg | < 10 | < 10 | <1 | 30% | Pass |
| N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) | M20-Ma48142 | NCP | ug/kg | < 10 | < 10 | <1 | 30% | Pass |
| Duplicate | | | | | | | | |
| Perfluoroalkyl sulfonic acids (PFSAs) | | | | Result 1 | Result 2 | RPD | | |
| Perfluorobutanesulfonic acid (PFBS) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluorononanesulfonic acid (PFNS) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluoropropanesulfonic acid (PFPrS) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluoropentanesulfonic acid (PFPeS) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluorohexanesulfonic acid (PFHxS) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluoroheptanesulfonic acid (PFHpS) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluorooctanesulfonic acid (PFOS) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| Perfluorodecanesulfonic acid (PFDS) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |

| Duplicate | | | | | | | | |
|--|-------------|-----|-------|----------|----------|-----|-----|------|
| n:2 Fluorotelomer sulfonic acids (n:2 FTSA) | | | | Result 1 | Result 2 | RPD | | |
| 1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| 1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) | M20-Ma48142 | NCP | ug/kg | < 10 | < 10 | <1 | 30% | Pass |
| 1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |
| 1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) | M20-Ma48142 | NCP | ug/kg | < 5 | < 5 | <1 | 30% | Pass |

Comments






Sample Integrity

| | |
|---|-----|
| Custody Seals Intact (if used) | N/A |
| Attempt to Chill was evident | Yes |
| Sample correctly preserved | Yes |
| Appropriate sample containers have been used | Yes |
| Sample containers for volatile analysis received with minimal headspace | Yes |
| Samples received within HoldingTime | Yes |
| Some samples have been subcontracted | No |

Qualifier Codes/Comments

| Code | Description |
|------|--|
| N01 | F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis). |
| N02 | Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid. |
| N04 | F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes. |
| N07 | Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs |
| N11 | Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds. |
| N15 | Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation). |
| Q08 | The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference. |
| Q15 | The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report. |

Authorised By

| | |
|--|--------------------------------|
|  | Analytical Services Manager |
|  | Senior Analyst-Metal (VIC) |
|  | Senior Analyst-Volatile (VIC) |
|  | Senior Analyst-Organic (VIC) |
|  | Senior Analyst-PFAS (QLD) |
|  | Senior Analyst-Inorganic (VIC) |





Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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