MORNINGTON SHIRE COUNCIL

ATTACHMENTS

UNDER SEPARATE COVER

Ordinary Council Meeting

27 January 2021

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11 January 2021

Mornington Shire Council
1 Mission Road
GUNUNA QLD 4892

Attention: **Peter Stewart**
Acting Chief Executive Officer

Dear Peter

Soil Assessment on Road Base at Mornington Island, QLD

Please find enclosed a copy of our report entitled as above. Thank you for the opportunity to undertake this work.

1 Introduction

Environmental Earth Sciences were engaged by Mornington Shire Council to undertake a soil assessment of road base imported to Mornington Island and used under selected roads. The sampling works were undertaking on 200 m of road located on Balleleah Road (see **Figure 1**). The works were required for environmental due diligence purposes due to reports of fish kills in on the island.

2 Objective

The objective of the Soil Assessment is to assess if the road base material imported to the island meets the definition of Clean Earth as per the Waste Reduction and Recycling (Waste Levy) Amendment Act 2019 (QLD Government 2019).

3 Scope of work

The following was undertaken to meet the stated objective:

- Development of a project specific safe work method statement (SWMS) to identify and manage potential health, safety and environmental risks associated with field works;
- Collection and analysis of representative primary and appropriate QA/QC samples from the road base at a rate of one sample per 20 m of the selected 200 m road section. Samples were submitted to a NATA accredited laboratory for analysis of the identified contaminants of potential concern (CoPCs); and

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- Preparation of this soil assessment report.

4 Methodology

4.1 Sampling Rationale

The sampling frequency of one sample every 20m along the 200 m section of road was considered suitable for a preliminary assessment for the imported road base. The section of road selected for the assessment was identified by Mornington Shire Council.

Samples were collected using dedicated nitrile gloves and were placed into laboratory supplied sampling containers, labelled with the location number, site reference and date before being placed into a cooler with ice. Samples were submitted to the laboratory under chain of custody documentation for analysis.

Samples were screened for volatile organic compounds in the field using a calibrated photoionization detector (PID). A copy of the calibration certificate is provided in Appendix A.

4.2 Adopted Assessment Criteria

In accordance with current legislation, the National Environmental Protection (Assessment of Site Contamination) Measure 1999, (amendment 1, 2013) and PFAS National Environmental Management Plan Version 2 (NEMP 2020) were referred to for applicable soil assessment criteria.

All soil samples were compared to Health Investigation Levels (HILs), Health Screening Levels (HSLs) for low density residential land use (sand) and Ecological Screening Levels (ESLs) for urban/residential and public open space (coarse soil) (NEPM 2013, NEMP 2020). If concentrations of the targeted contaminants of potential concern are below the above mentioned guidelines and free of waste, the soil will be considered to meet the definition of Clean Earth as per the Waste Reduction and Recycling (Waste Levy) Amendment Act 2019 (QLD Government 2019).

5 Fieldwork Summary

5.1 Soil Assessment

Environmental Earth Sciences undertook field assessment and sampling works on the 8th of December 2020. Works included logging of soil conditions (lithology), field screening for volatile organic compounds and documentation of evidence of contamination (e.g. foreign materials, visual and/or olfactory evidence). A total of 10 primary and 3 QA/QC samples (trip blank, intra-laboratory duplicate and inter-laboratory duplicate) were collected of the road base.

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5.2 Laboratory Analysis

Primary samples, the intra-laboratory duplicate and the trip blank were sent to ALS, the inter-laboratory duplicate was sent to Eurofins. Both labs are National Association of Testing Authorities (NATA) accredited laboratory for each of the analyses undertaken. Samples collected were analysed for selected CoPCs:

- Total recoverable hydrocarbons (TRH);
- Benzene, toluene, ethyl-benzene, xylene and naphthalene (BTEXN);
- Polycyclic aromatic hydrocarbons (PAH);
- Metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc, and mercury);
- Organochlorine and organophosphorus pesticides (OC/OPP); and
- PFAS (28 analytes).

6 Results

6.1 QA/QC data evaluation

Calculated RPDs between the primary sample and their corresponding duplicate and triplicate samples were generally within the acceptable limits (measurement data quality indicators) except for chromium between the primary (BH05) and inter-laboratory duplicate (SD01) samples. This elevated RPDs is likely due to the heterogeneity of the soil, however as chromium VI concentrations were below the adopted assessment criteria this RPD exceedance has not impacted the outcomes of this report.

The overall assessment of the data quality is as follows:

- all samples were analysed within recommended holding times;
- field observations and measurements were generally comparable to laboratory data;
- the use of field instruments was acceptable; and
- the dataset as a whole is considered reliable.

Based on the information presented it can be confidently stated that the data quality objectives for this project have been met and the data set is considered to be reliable for the purposes of this report.

6.2 Soil Description and Observations

The road base was comprised of soil (soft, red, clay with fine sand and coarse gravel present). No visual and/ or olfactory evidence of contamination (e.g. odour and/ or staining) were observed. All boreholes went to a maximum depth of 0.1 – 0.2 m which was the

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maximum depth of the road base in the locations sampled. PID readings did not exceed 0.0 PPM suggesting the absence of volatile organic compounds.

6.3 Soil Analytical Results

Soil results are summarised as follows:

- Total chromium concentrations were reported above the LOR for all samples, however concentrations were below the adopted assessment criteria for chromium VI, with the exception of the inter-laboratory duplicate sample SD01. As criteria is published for chromium VI and not total chromium, sample SD01 was speciated for chromium. The chromium VI concentration in sample SD01 was below the adopted assessment criteria as such chromium concentrations meet the definition of clean earth.
- Cadmium and mercury concentrations were reported below the LOR and adopted assessment criteria. Arsenic, copper, lead, nickel and zinc concentrations were reported above the LOR is selected samples, however concentrations were below the adopted criteria.
- Total recoverable hydrocarbons (TRHs) concentrations were reported below the laboratory's limit of reporting (LOR) and the adopted assessment criteria;
- BTEXN concentrations were reported were reported below the LOR and the adopted assessment criteria;
- Polycyclic aromatic hydrocarbons (PAHs) concentrations were reported below the LOR and adopted assessment criteria;
- OC/OPP concentrations were reported below the LOR and the adopted assessment criteria; and
- PFAS concentrations were reported below the LOR and the adopted assessment criteria.

Laboratory certificates are provided in Appendix B.

7 Conclusions and Recommendations

Based on the field observations and analytical results from the road base collected at Ballaleah Road, Mornington Island (Figure 1), the soil is considered to meet the definition of be *Clean Earth* as per the Waste Reduction and Recycling (Waste Levy) Amendment Act 2019. As such no further assessments works are recommended at this stage.

8 Limitations

This report has been prepared by Environmental Earth Sciences QLD ACN 109 442 284 in response to and subject to the following limitations:

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1. The specific instructions received from Mornington Shire Council;
2. The specific scope of works set out in PO720147 issued by Environmental Earth Sciences for and on behalf of Mornington Shire Council, is included in Section 3 (Scope of Work) of this report;
3. May not be relied upon by any third party not named in this report for any purpose except with the prior written consent of Environmental Earth Sciences QLD (which consent may or may not be given at the discretion of Environmental Earth Sciences QLD);
4. This report comprises the formal report, documentation sections, tables, figures and appendices as referred to in the index to this report and must not be released to any third party or copied in part without all the material included in this report for any reason;
5. The report only relates to the site referred to in the scope of works being located at Mornington Island ("the site");
6. The report relates to the site as at the date of the report as conditions may change thereafter due to natural processes and/or site activities;
7. No warranty or guarantee is made in regard to any other use than as specified in the scope of works and only applies to the depth tested and reported in this report;
8. Fill, soil, groundwater and rock to the depth tested on the site may be fit for the use specified in this report. Unless it is expressly stated in this report, the fill, soil and/or rock may not be suitable for classification as clean fill if deposited off site;
9. This report is not a geotechnical or planning report suitable for planning or zoning purposes; and
10. Our General Limitations set out at the back of the body of this report.

Should you have any queries, please do not hesitate to contact us on (07) 3852 6666

For and on behalf of
Environmental Earth Sciences QLD

Project Manager
Darcy Wilson
Environmental Scientist

Project Director / Internal Reviewer
Robbie Johns
QLD Manager

720077

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9 References

NEPM 2013. National Environmental Protection (Assessment of Site Contamination) Measure 1999, (amendment 1, 2013), National Environmental Protection Council, Canberra.

NEMP 2020. PFAS National Environmental Management Plan Version 2.0, Heads of EPA Australia and New Zealand 2020.

Queensland Government 2019. Waste Reduction and Recycling (Waste Levy) Amendment Act 2019.

10 Glossary of terms

The following descriptions are of terms used in the text of this report.

Clay. A soil material composed of particles finer than 0.002 mm. When used as a soil texture group such soils contain at least 35% clay.

Clean Earth. (a) means earth that is not contaminated with waste or otherwise contaminated with a hazardous contaminant; but (b) does not include acid sulphate soil, other than acid sulphate soil that— (i) is not contaminated with waste, or otherwise contaminated with a hazardous contaminant, other than naturally occurring iron sulphides that produce sulphuric acid when exposed to air; and (ii) has been treated in accordance with best practice environmental management, within the meaning of the Environmental Protection Act, section 21, for the treatment and management of acid sulfate soils.

Contaminant. Generally, any chemical species introduced into the soil or water. More particularly relates to those species that render soil or water unfit for beneficial use.

Contamination. Is considered to have occurred when the concentration of a specific element or compound is established as being greater than the normally expected (or actually quantified) background concentration.

Heavy Metals. All metallic elements whose atomic mass exceeds that of calcium (20) and includes lead (Pb), copper (Cu), Zinc (Zn), cadmium (Cd), and tin (Sn).

Hydrocarbon. A molecule consisting of carbon and hydrogen atoms only, such as found in petroleum.

Polycyclic aromatic Hydrocarbons (PAHs). Complex organic molecules which originate typically in the combustion of organic compounds.

QA/QC. Quality Assurance / Quality Control.

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ENVIRONMENTAL EARTH SCIENCES GENERAL LIMITATIONS

Scope of services
The work presented in this report is Environmental Earth Sciences response to the specific scope of works requested by, planned with and approved by the client. It cannot be relied on by any other third party for any purpose except with our prior written consent. Client may distribute this report to other parties and in doing so warrants that the report is suitable for the purpose it was intended for. However, any party wishing to rely on this report should contact us to determine the suitability of this report for their specific purpose.

Data should not be separated from the report
A report is provided inclusive of all documentation sections, limitations, tables, figures and appendices and should not be provided or copied in part without all supporting documentation for any reason, because misinterpretation may occur.

Subsurface conditions change
Understanding an environmental study will reduce exposure to the risk of the presence of contaminated soil and or groundwater. However, contaminants may be present in areas that were not investigated, or may migrate to other areas. Analysis cannot cover every type of contaminant that could possibly be present. When combined with field observations, field measurements and professional judgement, this approach increases the probability of identifying contaminated soil and or groundwater. Under no circumstances can it be considered that these findings represent the actual condition of the site at all points.

Environmental studies identify actual sub-surface conditions only at those points where samples are taken, when they are taken. Actual conditions between sampling locations differ from those inferred because no professional, no matter how qualified, and no sub-surface exploration program, no matter how comprehensive, can reveal what is hidden below the ground surface. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from that predicted. Nothing can be done to prevent the unanticipated. However, steps can be taken to help minimize the impact. For this reason, site owners should retain our services.

Problems with interpretation by others
Advice and interpretation is provided on the basis that subsequent work will be undertaken by Environmental Earth Sciences QLD. This will identify variances, maintain consistency in how data is interpreted, conduct additional tests that may be necessary and recommend solutions to problems encountered on site. Other parties may misinterpret our work and we cannot be responsible for how the information in this report is used. If further data is collected or comes to light we reserve the right to alter their conclusions.

Obtain regulatory approval
The investigation and remediation of contaminated sites is a field in which legislation and interpretation of legislation is changing rapidly. Our interpretation of the investigation findings should not be taken to be that of any other party. When approval from a statutory authority is required for a project, that approval should be directly sought by the client.

Limit of liability
This study has been carried out to a particular scope of works at a specified site and should not be used for any other purpose. This report is provided on the condition that Environmental Earth Sciences QLD disclaims all liability to any person or entity other than the client in respect of anything done or omitted to be done and of the consequence of anything done or omitted to be done by any such person in reliance, whether in whole or in part, on the contents of this report. Furthermore, Environmental Earth Sciences QLD disclaims all liability in respect of anything done or omitted to be done and of the consequence of anything done or omitted to be done by the client, or any such person in reliance, whether in whole or any part of the contents of this report of all matters not stated in the brief outlined in Environmental Earth Sciences QLD's proposal number and according to Environmental Earth Sciences general terms and conditions and special terms and conditions for contaminated sites.

To the maximum extent permitted by law, we exclude all liability of whatever nature, whether in contract, tort or otherwise, for the acts, omissions or default, whether negligent or otherwise for any loss or damage whatsoever that may arise in any way in connection with the supply of services. Under circumstances where liability cannot be excluded, such liability is limited to the value of the purchased service.

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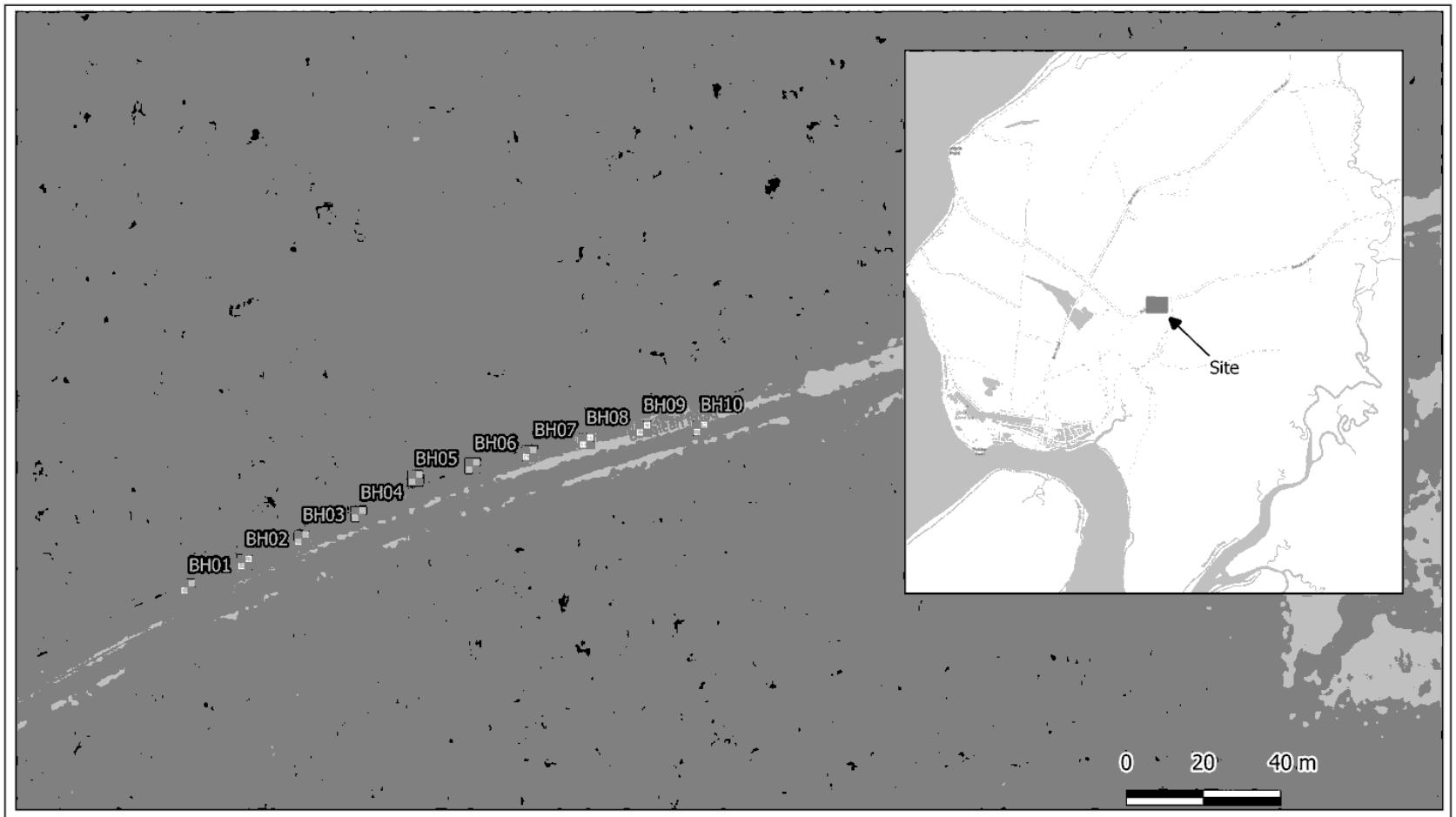
FIGURES



LEGEND

Surface Soil Location

Coordinate Reference System:
GDA 94 MGA Zone 54
EPSG:28354

Basemap:
GoogleSat
Open Street Map

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Title:	**Sampling Locations**
Location:	**Balleleah Road, Mornington Island**
Client: **Mornington Shire Council**	Job No: **720077**
Project Man: **D.Wilson**	Scale: **As Shown**
Drawn By: **D.Wilson**	Date: **DEC 2020**

Figure 1

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Figure 2: BH01 Test pit

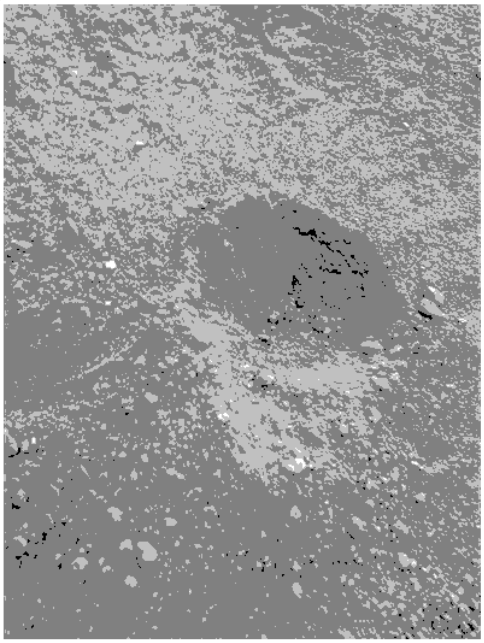

Figure 3: BH02 Test pit

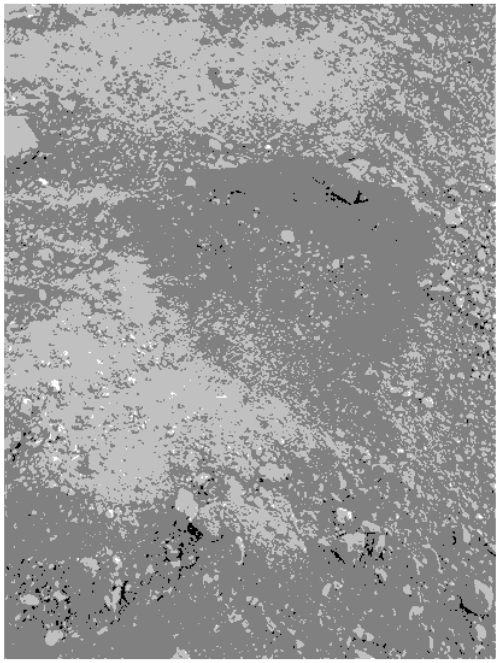

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Figure 4: BH03 Test pit

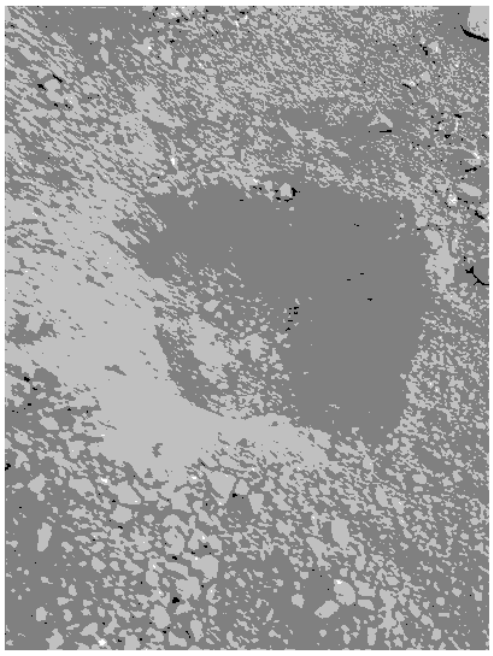

Figure 5: BH04 Test pit

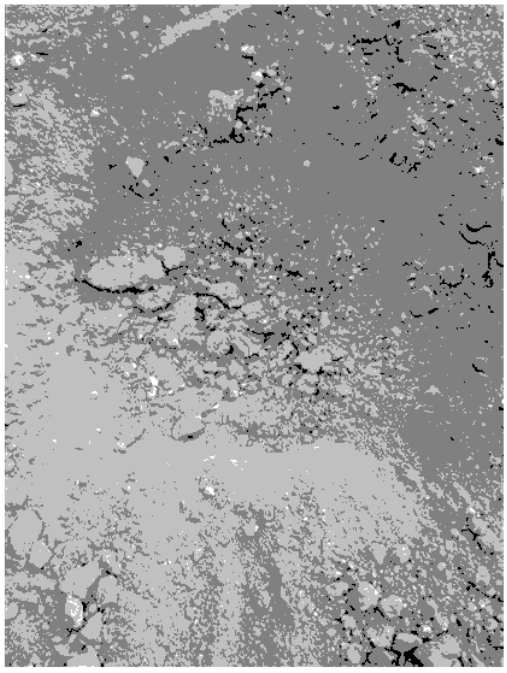

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Figure 6: BH05 Test pit

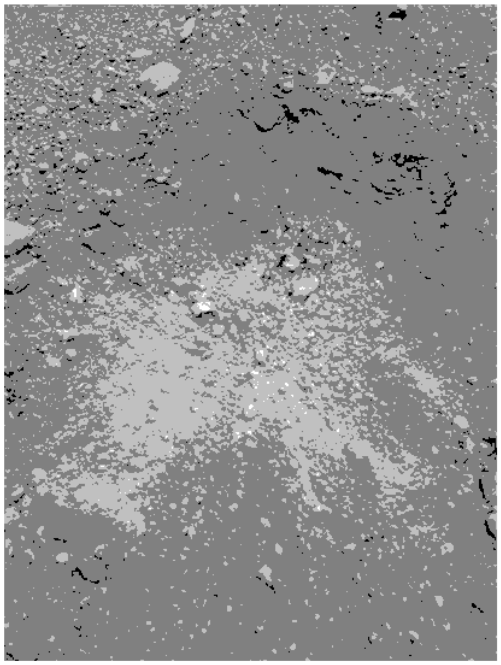

Figure 7: BH06 Test pit

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Figure 8: BH07 Test pit

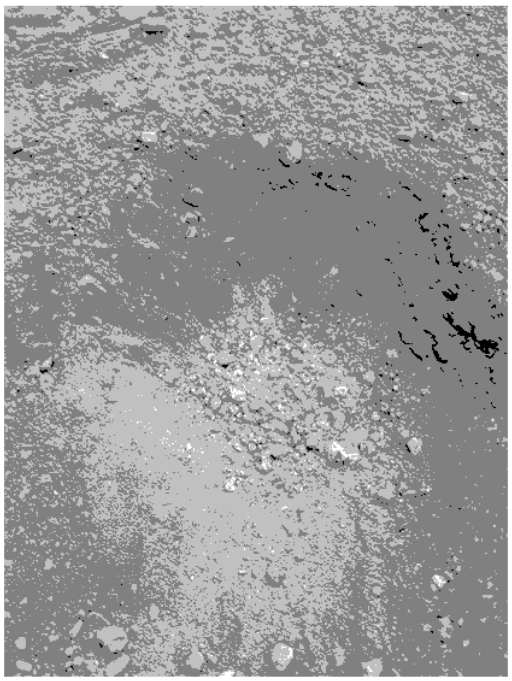

Figure 9: BH08 Test pit

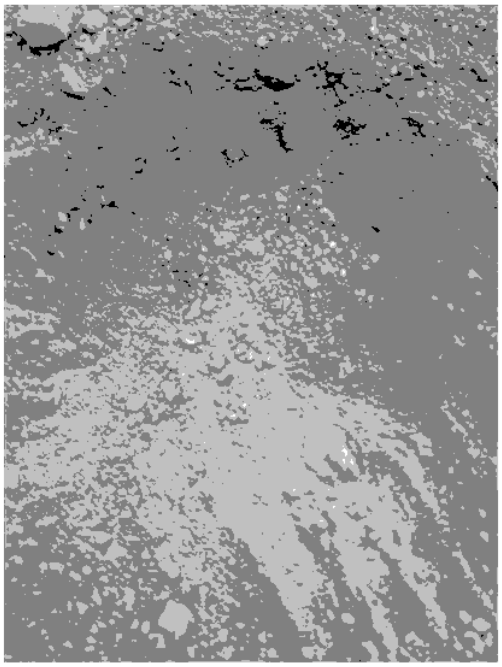

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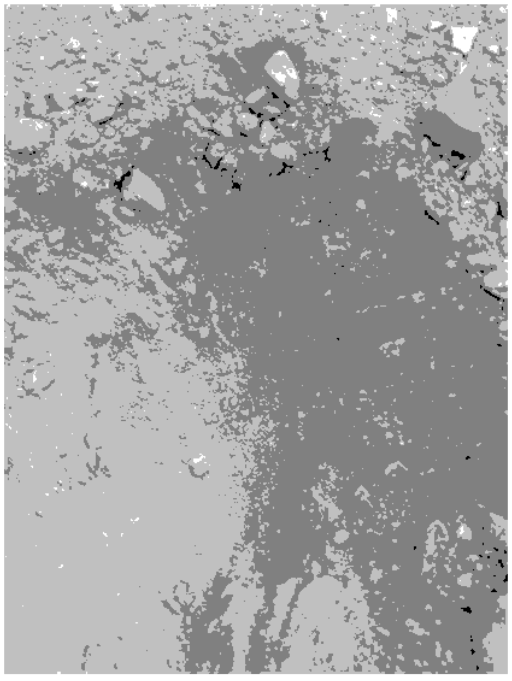
Figure 10: BH09 Test pit

Figure 11: BH10 Test pit



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TABLES

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Table T1
Soil analytical results
(Metals + Pesticides)

			Metals									Organochloride Pesticides							
			Arsenic	Cadmium	Total Chromium	Chromium (VI)	Copper	Lead	Nickel	Zinc	Mercury	Sum of DDT+DDE+DDD	Aldrin and Dieldrin	Chlordane	Endosulfan	Endrin	Heptachlor	Hexachlorobenzene (HCB)	Methoxychlor
NEPM HIL-A - Residential			100	20	-	100	6000	300	400	7400	40	240	6	50	270	10	6	10	300
		Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		LOR	5	1	2	5	5	5	2	5	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2
Sample	Date	Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH01	8/12/20	Soil	<5	<1	31	---	<5	11	2	<5	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
BH02	8/12/20	Soil	<5	<1	25	---	<5	9	2	<5	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
BH03	8/12/20	Soil	<5	<1	28	---	<5	11	<2	<5	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
BH04	8/12/20	Soil	<5	<1	36	---	<5	40	<2	<5	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
BH05	8/12/20	Soil	<5	<1	31	---	<5	10	<2	<5	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
BH06	8/12/20	Soil	<5	<1	51	---	<5	19	<2	<5	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
BH07	8/12/20	Soil	<5	<1	43	---	<5	12	2	<5	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
BH08	8/12/20	Soil	<5	<1	35	---	<5	11	2	<5	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
BH09	8/12/20	Soil	<5	<1	38	---	<5	12	<2	<5	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
BH10	8/12/20	Soil	<5	<1	32	---	<5	46	<2	<5	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
BD01	8/12/20	Soil	<5	<1	42	---	<5	12	2	<5	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
SD01	8/12/20	Soil	37	<0.5	110	<1	13	23	6.9	8.7	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2

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Table T2
Soil analytical results
(Polynuclear Aromatic Hydrocarbons)

			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a.h)anthracene	Benzo(g.h.i)perylene	Sum of PAHs
NEPM HIL-A - Residential			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300
NEPM HSL – High density residential (A & B)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM ESL - Urban residential and public			-	-	-	-	-	-	-	-	-	-	-	-	0.7	-	-	-	-
		Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		LOR	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sample	Date	Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH01	8/12/20	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH02	8/12/20	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH03	8/12/20	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH04	8/12/20	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH05	8/12/20	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH06	8/12/20	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH07	8/12/20	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH08	8/12/20	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH09	8/12/20	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH10	8/12/20	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BD01	8/12/20	Soil	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SD01	8/12/20	Soil	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

ENVIRONMENTAL EARTH SCIENCES
CONTAMINATION RESOLVED

Table T2
Soil analytical results
(Polynuclear Aromatic Hydrocarbons)

			Benzo(a)pyrene TEQ (zero)	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)
NEPM HIL-A - Residential			3	3	3
NEPM HSL – High density residential (A & B)			-	-	-
NEPM ESL - Urban residential and public			-	-	-
		Units	mg/kg	mg/kg	mg/kg
		LOR	0.5	0.5	0.5
Sample	Date	Type	-	-	-
BH01	8/12/20	Soil	<0.5	0.6	1.2
BH02	8/12/20	Soil	<0.5	0.6	1.2
BH03	8/12/20	Soil	<0.5	0.6	1.2
BH04	8/12/20	Soil	<0.5	0.6	1.2
BH05	8/12/20	Soil	<0.5	0.6	1.2
BH06	8/12/20	Soil	<0.5	0.6	1.2
BH07	8/12/20	Soil	<0.5	0.6	1.2
BH08	8/12/20	Soil	<0.5	0.6	1.2
BH09	8/12/20	Soil	<0.5	0.6	1.2
BH10	8/12/20	Soil	<0.5	0.6	1.2
BD01	8/12/20	Soil	<0.5	0.6	1.2
SD01	8/12/20	Soil	<0.05	0.6	1.2

ENVIRONMENTAL EARTH SCIENCES
CONTAMINATION RESOLVED

Table T
Soil analytical results
(TR H B T)

			Total Reco erable Hydrocarbon - NEPM 2013 Fractions							BTE N								Total Petroleum Hydrocarbons	
			C6 - C10 Fraction	C6 - C10 Fraction minus BTE (F1)	C10 - C16 Fraction	C16 - C34 Fraction	C34 - C40 Fraction	C10 - C40 Fraction (sum)	C10 - C16 Fraction minus Naphthalene (F2)	Benzene	Toluene	Ethylbenzene	meta- & para- ylene	ortho- ylene	Total ylenes	Sum of BTE	Naphthalene	C6 - C9 Fraction	C10 - C14 Fraction
NEPM HSL – High density residential (A & B)			-	-	-	-	110	0.5	160	55	-	-	40	-	3	-	-	-	-
NEPM ESL - Urban residential and public open spac			120	300	2800	-	120	50	85	70	-	-	105	-	-	-	-	-	-
		Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		LOR	10	10	50	100	100	50	50	0.2	0.5	0.5	0.5	0.5	0.5	0.2	1	10	50
Sample	Date	Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH01	8/12/20	Soil	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	<50
BH02	8/12/20	Soil	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	<50
BH03	8/12/20	Soil	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	<50
BH04	8/12/20	Soil	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	<50
BH05	8/12/20	Soil	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	<50
BH06	8/12/20	Soil	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	<50
BH07	8/12/20	Soil	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	<50
BH08	8/12/20	Soil	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	<50
BH09	8/12/20	Soil	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	<50
BH10	8/12/20	Soil	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	<50
BD01	8/12/20	Soil	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<10	<50
SD01	8/12/20	Soil	<20	<20	<50	<100	<100	<100	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	----	----	<20	<20

ENVIRONMENTAL EARTH SCIENCES
CONTAMINATION RESOLVED

Table T
Soil analytical results
(TR H B T)

			Total Petroleum Hydrocarbons		
			C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)
NEPM HSL – High density residential (A & B)			-	-	-
NEPM ESL - Urban residential and public open spac			-	-	16
		Units	mg/kg	mg/kg	mg/kg
		LOR	100	100	50
Sample	Date	Type	-	-	-
BH01	8/12/20	Soil	<100	<100	<50
BH02	8/12/20	Soil	<100	<100	<50
BH03	8/12/20	Soil	<100	<100	<50
BH04	8/12/20	Soil	<100	<100	<50
BH05	8/12/20	Soil	<100	<100	<50
BH06	8/12/20	Soil	<100	<100	<50
BH07	8/12/20	Soil	<100	<100	<50
BH08	8/12/20	Soil	<100	<100	<50
BH09	8/12/20	Soil	<100	<100	<50
BH10	8/12/20	Soil	<100	<100	<50
BD01	8/12/20	Soil	<100	<100	<50
SD01	8/12/20	Soil	<50	<50	<50

ENVIRONMENTAL EARTH SCIENCES
CONTAMINATION RESOLVED

Table T
Soil analytical results
(P AS)

	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohe ane sulfonic acid (PFH S)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohe anoic acid (PFH A)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
NEMP HIL-A - Residential ith garden/assessible soil	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-

		Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		LOR	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005
Sample	Date	Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH01	8/12/20	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
BH02	8/12/20	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
BH03	8/12/20	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
BH04	8/12/20	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
BH05	8/12/20	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
BH06	8/12/20	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
BH07	8/12/20	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
BH08	8/12/20	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
BH09	8/12/20	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
BH10	8/12/20	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
BD01	8/12/20	Soil	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
SD01	8/12/20	Soil	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	----	----	----	----

ENVIRONMENTAL EARTH SCIENCES
CONTAMINATION RESOLVED

Table T
Soil analytical results
(P AS)

	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4 2 Fluorotelomer sulfoni acid (4 2 FTS)	6 2 Fluorotelomer sulfoni acid (6 2 FTS)	8 2 Fluorotelomer sulfoni acid (8 2 FTS)	10 2 Fluorotelomer sulfonic acid (10 2 FTS)	Sum of PFAS	Sum of PFH S and PFOS	Sum of PFAS (A DER List)
NEMP HIL-A - Residential ith garden/assessible soil	-	-	-	-	-	-	-	-	-	-	-	-	0.01	-

		Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		LOR	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0002
Sample	Date	Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH01	8/12/20	Soil	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002
BH02	8/12/20	Soil	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002
BH03	8/12/20	Soil	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002
BH04	8/12/20	Soil	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002
BH05	8/12/20	Soil	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002
BH06	8/12/20	Soil	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002
BH07	8/12/20	Soil	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002
BH08	8/12/20	Soil	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002
BH09	8/12/20	Soil	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002
BH10	8/12/20	Soil	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002
BD01	8/12/20	Soil	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002
SD01	8/12/20	Soil	----	----	----	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

ENVIRONMENTAL EARTH SCIENCES
CONTAMINATION RESOLVED

Table 5
RPD Analysis

Analyte	Units	LOR	ALS 8/12/2020 BH05	ALS 8/12/2020 BD01	Eurofins 8/12/2020 SD01	RPD1	RPD2	Criteria	5xLOR	10xLOR	These are utilised for RPD highlight formatting. RPD1	RPD2	Criteria
Arsenic	mg/kg	5	<5	<5	37	N/C	N/C	No Limit	25	50	#VALUE!	#VALUE!	1E+200
Cadmium	mg/kg	1	<1	<1	<0.5	N/C	N/C	No Limit	5	10	#VALUE!	#VALUE!	1E+200
Chromium	mg/kg	2	31	42	110	30%	112%	<50%	10	20	30.13699	112.0567	50
Copper	mg/kg	5	<5	<5	13	N/C	N/C	No Limit	25	50	#VALUE!	#VALUE!	1E+200
Lead	mg/kg	5	10	12	23	18%	79%	No Limit	25	50	18.18182	78.78788	1E+200
Nickel	mg/kg	2	<2	2	6.9	N/C	N/C	No Limit	10	20	#VALUE!	#VALUE!	1E+200
Zinc	mg/kg	5	<5	<5	8.7	N/C	N/C	No Limit	25	50	#VALUE!	#VALUE!	1E+200
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	N/C	N/C	No Limit	0.5	1	#VALUE!	#VALUE!	1E+200
Sum of DDT+DDE+DDD	mg/kg	0.05	<0.05	<0.05	<0.05	N/C	N/C	No Limit	0.25	0.5	#VALUE!	#VALUE!	1E+200
Aldrin and Dieldrin	mg/kg	0.05	<0.05	<0.05	<0.05	N/C	N/C	No Limit	0.25	0.5	#VALUE!	#VALUE!	1E+200
Chlordane	mg/kg	0.05	<0.05	<0.05	<0.1	N/C	N/C	No Limit	0.25	0.5	#VALUE!	#VALUE!	1E+200
Endosulfan	mg/kg	0.05	<0.05	<0.05	<0.05	N/C	N/C	No Limit	0.25	0.5	#VALUE!	#VALUE!	1E+200
Endrin	mg/kg	0.05	<0.05	<0.05	<0.05	N/C	N/C	No Limit	0.25	0.5	#VALUE!	#VALUE!	1E+200
Heptachlor	mg/kg	0.05	<0.05	<0.05	<0.05	N/C	N/C	No Limit	0.25	0.5	#VALUE!	#VALUE!	1E+200
Hexachlorobenzene (HCB)	mg/kg	0.05	<0.05	<0.05	<0.05	N/C	N/C	No Limit	0.25	0.5	#VALUE!	#VALUE!	1E+200
Methoxychlor	mg/kg	0.2	<0.2	<0.2	<0.05	N/C	N/C	No Limit	1	2	#VALUE!	#VALUE!	1E+200
Naphthalene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Acenaphthylene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Acenaphthene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Fluorene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Phenanthrene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Anthracene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Fluoranthene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Pyrene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Benz(a)anthracene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Chrysene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Benzo(b+j)fluoranthene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Benzo(k)fluoranthene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Benzo(a)pyrene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Indeno(1.2.3.cd)pyrene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Dibenz(a.h)anthracene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Benzo(g.h.i)perylene	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Sum of PAHs	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Benzo(a)pyrene TEQ (zero)	mg/kg	0.5	<0.05	<0.05	<0.05	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Benzo(a)pyrene TEQ (half LOR)	mg/kg	0.5	0.6	0.6	0.6	0%	0%	No Limit	2.5	5	0	0	1E+200
Benzo(a)pyrene TEQ (LOR)	mg/kg	0.5	1.2	1.2	1.2	0%	0%	No Limit	2.5	5	0	0	1E+200
C6 - C10 Fraction	mg/kg	10	<10	<10	<20	N/C	N/C	No Limit	50	100	#VALUE!	#VALUE!	1E+200
C6 - C10 Fraction minus BTEX (F1)	mg/kg	10	<10	<10	<20	N/C	N/C	No Limit	50	100	#VALUE!	#VALUE!	1E+200
>C10 - C16 Fraction	mg/kg	50	<50	<50	<50	N/C	N/C	No Limit	250	500	#VALUE!	#VALUE!	1E+200
>C16 - C34 Fraction	mg/kg	100	<100	<100	<100	N/C	N/C	No Limit	500	1000	#VALUE!	#VALUE!	1E+200
>C34 - C40 Fraction	mg/kg	100	<100	<100	<100	N/C	N/C	No Limit	500	1000	#VALUE!	#VALUE!	1E+200
>C10 - C40 Fraction (sum)	mg/kg	50	<50	<50	<100	N/C	N/C	No Limit	250	500	#VALUE!	#VALUE!	1E+200
>C10 - C16 Fraction minus Naphthalene (F2)	mg/kg	50	<50	<50	<50	N/C	N/C	No Limit	250	500	#VALUE!	#VALUE!	1E+200
Benzene	mg/kg	0.2	<0.2	<0.2	<0.1	N/C	N/C	No Limit	1	2	#VALUE!	#VALUE!	1E+200

Shaded - RPD Exceedance
N/C - Not Calculatable

ENVIRONMENTAL EARTH SCIENCES
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Table 5
RPD Analysis

Analyte	Units	LOR	ALS	ALS	Eurofins	RPD1	RPD2	Criteria	5xLOR	10xLOR	These are utilised for RPD highlight formatting.		
			8/12/2020	8/12/2020	8/12/2020						RPD1	RPD2	Criteria
			BH05	BD01	SD01								
Toluene	mg/kg	0.5	<0.5	<0.5	<0.1	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Ethylbenzene	mg/kg	0.5	<0.5	<0.5	<0.1	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
meta- & para-Xylene	mg/kg	0.5	<0.5	<0.5	<0.2	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
ortho-Xylene	mg/kg	0.5	<0.5	<0.5	<0.1	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Total Xylenes	mg/kg	0.5	<0.5	<0.5	<0.3	N/C	N/C	No Limit	2.5	5	#VALUE!	#VALUE!	1E+200
Sum of BTEX	mg/kg	0.2	<0.2	<0.2	----	N/C	N/C	No Limit	1	2	#VALUE!	#VALUE!	1E+200
Naphthalene	mg/kg	1	<1	<1	----	N/C	N/C	No Limit	5	10	#VALUE!	#VALUE!	1E+200
C6 - C9 Fraction	mg/kg	10	<10	<10	<20	N/C	N/C	No Limit	50	100	#VALUE!	#VALUE!	1E+200
C10 - C14 Fraction	mg/kg	50	<50	<50	<20	N/C	N/C	No Limit	250	500	#VALUE!	#VALUE!	1E+200
C15 - C28 Fraction	mg/kg	100	<100	<100	<50	N/C	N/C	No Limit	500	1000	#VALUE!	#VALUE!	1E+200
C29 - C36 Fraction	mg/kg	100	<100	<100	<50	N/C	N/C	No Limit	500	1000	#VALUE!	#VALUE!	1E+200
C10 - C36 Fraction (sum)	mg/kg	50	<50	<50	<50	N/C	N/C	No Limit	250	500	#VALUE!	#VALUE!	1E+200
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluorodecane sulfonic acid (PFDS)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluorobutanoic acid (PFBA)	mg/kg	0.001	<0.001	<0.001	<0.005	N/C	N/C	No Limit	0.005	0.01	#VALUE!	#VALUE!	1E+200
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluorooctanoic acid (PFOA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluorononanoic acid (PFNA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.0002	<0.0002	<0.0002	----	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002	<0.0002	<0.0002	----	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002	<0.0002	<0.0002	----	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005	<0.0005	<0.0005	----	N/C	N/C	No Limit	0.0025	0.005	#VALUE!	#VALUE!	1E+200
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.0002	<0.0002	<0.0002	----	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
N-Methyl perfluorooctane sulfonamide (MeFOSA)	mg/kg	0.0005	<0.0005	<0.0005	----	N/C	N/C	No Limit	0.0025	0.005	#VALUE!	#VALUE!	1E+200
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	mg/kg	0.0005	<0.0005	<0.0005	----	N/C	N/C	No Limit	0.0025	0.005	#VALUE!	#VALUE!	1E+200
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	N/C	N/C	No Limit	0.0025	0.005	#VALUE!	#VALUE!	1E+200
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	N/C	N/C	No Limit	0.0025	0.005	#VALUE!	#VALUE!	1E+200
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	N/C	N/C	No Limit	0.0025	0.005	#VALUE!	#VALUE!	1E+200
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	N/C	N/C	No Limit	0.0025	0.005	#VALUE!	#VALUE!	1E+200
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	N/C	N/C	No Limit	0.0025	0.005	#VALUE!	#VALUE!	1E+200
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	N/C	N/C	No Limit	0.0025	0.005	#VALUE!	#VALUE!	1E+200
Sum of PFAS	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Sum of PFHxS and PFOS	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200
Sum of PFAS (WA DER List)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	N/C	N/C	No Limit	0.001	0.002	#VALUE!	#VALUE!	1E+200

Shaded - RPD Exceedance
N/C - Not Calculatable

ENVIRONMENTAL EARTH SCIENCES
CONTAMINATION RESOLVED

APPENDIX A: PID CALIBRATION CERTIFICATE

720077

KENNARDS HIRE

EQUIPMENT CERTIFICATION REPORT

PGN9003827 GAS DETECTOR - PID

Plant Number: 235026

SENSOR	CONCENTRATION	SPAN 1	SPAN 2	TRACEABILITY	PASS
PID Isobutylene	100ppm	0	100ppm	Lot # 1364345	☑

Data Cleared ☑

Battery Status 100 (%)	Temperature 22.1 °C
Electrical Test & Tag (AS/NZS 3760)	Inlet Filter Checked/Changed

Note: Calibration traceability information is available upon request.

Please clean/decontaminate instrument and accessories before returning. A minimum 'Cleaning Fee' $55.00 (Inc GST) may apply if instrument is returned contaminated.

Checked By: C.Lynch Date: 30/11/20 Signed: C.Lynch

Accessories List:

User's Manual	Charger / Comms Adaptor	Wall Charger
2x Spare Air Filters	1x Spare Rechargeable Battery	Carry Transit Case
	Calibration Report	

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ENVIRONMENTAL EARTH SCIENCES
CONTAMINATION RESOLVED

APPENDIX B: LABORATORY CERTIFICATES

720077

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2032900**	Page	: 1 of 22
Client	: **ENVIRONMENTAL EARTH SCIENCES**	Laboratory	: Environmental Division Brisbane
Contact	: MR ROBBIE JOHNS	Contact	: Andrew Epps
Address	: Unit 3/ 1 Ross Street NEWSTEAD QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: 07 3852 6666	Telephone	: +61 7 3552 8639
Project	: 720077	Date Samples Received	: 10-Dec-2020 10:30
Order number	: ----	Date Analysis Commenced	: 11-Dec-2020
C-O-C number	: ----	Issue Date	: 18-Dec-2020 09:47
Sampler	: D.WILSON		
Site	: Mornington Island		
Quote number	: EN/010/20		
No. of samples received	: 12		
No. of samples analysed	: 12		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Thomas Donovan		Brisbane Organics, Stafford, QLD

Page	: 2 of 22
Work Order	: EB2032900
Client	: ENVIRONMENTAL EARTH SCIENCES
Project	: 720077

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X PFAS: High LCS recovery deemed acceptable as all associated analyte results are less than LOR.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

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Work Order : EB2032900
Client : ENVIRONMENTAL EARTH SCIENCES
Project : 720077

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH01	BH02	BH03	BH04	BH05
			Sampling date / time	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	EB2032900-001	EB2032900-002	EB2032900-003	EB2032900-004	EB2032900-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	2.3	3.7	2.8	2.8	2.6
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	31	25	28	36	31
Copper	7440-50-8	5	mg/kg	<5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg	11	9	11	40	10
Nickel	7440-02-0	2	mg/kg	2	2	<2	<2	<2
Zinc	7440-66-6	5	mg/kg	<5	<5	<5	<5	<5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

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Work Order : EB2032900
Client : ENVIRONMENTAL EARTH SCIENCES
Project : 720077

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH01	BH02	BH03	BH04	BH05
				Sampling date / time	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00
Compound	CAS Number	LOR	Unit		EB2032900-001	EB2032900-002	EB2032900-003	EB2032900-004	EB2032900-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Project : 720077

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH01	BH02	BH03	BH04	BH05
				Sampling date / time	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00
Compound	CAS Number	LOR	Unit		EB2032900-001	EB2032900-002	EB2032900-003	EB2032900-004	EB2032900-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH01	BH02	BH03	BH04	BH05
				Sampling date / time	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00
Compound	CAS Number	LOR	Unit		EB2032900-001	EB2032900-002	EB2032900-003	EB2032900-004	EB2032900-005
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

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Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH01	BH02	BH03	BH04	BH05
				Sampling date / time	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00
Compound	CAS Number	LOR	Unit		EB2032900-001	EB2032900-002	EB2032900-003	EB2032900-004	EB2032900-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		96.6	100	101	104	105
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		82.4	91.6	88.8	87.1	91.2
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		88.2	84.4	84.1	92.7	90.7
2-Chlorophenol-D4	93951-73-6	0.5	%		83.7	81.7	76.7	91.3	88.8
2.4.6-Tribromophenol	118-79-6	0.5	%		63.9	63.6	61.7	63.9	64.9
EP075(SIM)T: PAH Surrogates									

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Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH01	BH02	BH03	BH04	BH05
				Sampling date / time	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00
Compound	CAS Number	LOR	Unit		EB2032900-001	EB2032900-002	EB2032900-003	EB2032900-004	EB2032900-005
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
2-Fluorobiphenyl	321-60-8	0.5	%		82.7	76.4	74.8	89.0	82.7
Anthracene-d10	1719-06-8	0.5	%		101	102	98.3	101	103
4-Terphenyl-d14	1718-51-0	0.5	%		138	141	139	143	144
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		90.4	89.2	85.5	86.5	89.6
Toluene-D8	2037-26-5	0.2	%		66.3	67.9	66.0	65.3	64.7
4-Bromofluorobenzene	460-00-4	0.2	%		76.8	76.2	76.5	74.4	73.0
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		95.0	86.5	95.0	106	127
13C8-PFOA	----	0.0002	%		112	113	104	122	116

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Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH06	BH07	BH08	BH09	BH10
			Sampling date / time	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00
Compound	CAS Number	LOR	Unit	EB2032900-006	EB2032900-007	EB2032900-008	EB2032900-009	EB2032900-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	2.2	2.8	2.6	2.0	2.3
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	51	43	35	38	32
Copper	7440-50-8	5	mg/kg	<5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg	19	12	11	12	46
Nickel	7440-02-0	2	mg/kg	<2	2	2	<2	<2
Zinc	7440-66-6	5	mg/kg	<5	<5	<5	<5	<5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH06	BH07	BH08	BH09	BH10
				Sampling date / time	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00
Compound	CAS Number	LOR	Unit		EB2032900-006	EB2032900-007	EB2032900-008	EB2032900-009	EB2032900-010
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH06	BH07	BH08	BH09	BH10
				Sampling date / time	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00
Compound	CAS Number	LOR	Unit		EB2032900-006	EB2032900-007	EB2032900-008	EB2032900-009	EB2032900-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH06	BH07	BH08	BH09	BH10
				Sampling date / time	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00
Compound	CAS Number	LOR	Unit		EB2032900-006	EB2032900-007	EB2032900-008	EB2032900-009	EB2032900-010
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

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Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH06	BH07	BH08	BH09	BH10
				Sampling date / time	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00
Compound	CAS Number	LOR	Unit		EB2032900-006	EB2032900-007	EB2032900-008	EB2032900-009	EB2032900-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		102	129	94.6	97.9	109
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		93.6	117	81.4	85.3	85.5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		78.0	91.6	72.6	78.2	90.2
2-Chlorophenol-D4	93951-73-6	0.5	%		73.1	89.7	68.1	78.6	87.4
2.4.6-Tribromophenol	118-79-6	0.5	%		65.8	74.8	54.5	53.4	58.2
EP075(SIM)T: PAH Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH06	BH07	BH08	BH09	BH10
				Sampling date / time	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00	08-Dec-2020 00:00
Compound	CAS Number	LOR	Unit		EB2032900-006	EB2032900-007	EB2032900-008	EB2032900-009	EB2032900-010
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
2-Fluorobiphenyl	321-60-8	0.5	%		71.0	85.2	67.7	70.5	81.2
Anthracene-d10	1719-06-8	0.5	%		102	108	92.5	96.0	98.5
4-Terphenyl-d14	1718-51-0	0.5	%		143	127	132	140	145
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		96.6	88.1	87.1	86.2	88.0
Toluene-D8	2037-26-5	0.2	%		68.9	69.0	62.7	66.2	65.4
4-Bromofluorobenzene	460-00-4	0.2	%		81.1	78.9	75.0	72.5	74.6
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		106	111	116	117	100
13C8-PFOA	----	0.0002	%		117	122	116	120	108

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Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BD01	----	----	----	----
			Sampling date / time	08-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB2032900-011	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	3.3	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	42	----	----	----	----
Copper	7440-50-8	5	mg/kg	<5	----	----	----	----
Lead	7439-92-1	5	mg/kg	12	----	----	----	----
Nickel	7440-02-0	2	mg/kg	2	----	----	----	----
Zinc	7440-66-6	5	mg/kg	<5	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BD01	----	----	----	----
				Sampling date / time	08-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2032900-011	--------	--------	--------	--------
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BD01	----	----	----	----
				Sampling date / time	08-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2032900-011	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	----	----

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Work Order : EB2032900
Client : ENVIRONMENTAL EARTH SCIENCES
Project : 720077

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BD01	----	----	----	----
				Sampling date / time	08-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2032900-011	--------	--------	--------	--------
					Result	----	----	----	----
EP080: BTEXN - Continued									
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	----	----	----	----

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Work Order : EB2032900
Client : ENVIRONMENTAL EARTH SCIENCES
Project : 720077

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BD01	----	----	----	----
				Sampling date / time	08-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2032900-011	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		104	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		88.9	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		87.5	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		85.0	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		59.1	----	----	----	----
EP075(SIM)T: PAH Surrogates									

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Work Order : EB2032900
Client : ENVIRONMENTAL EARTH SCIENCES
Project : 720077

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BD01	----	----	----	----
				Sampling date / time	08-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2032900-011	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)T: PAH Surrogates - Continued									
2-Fluorobiphenyl	321-60-8	0.5	%		78.4	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		98.8	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		147	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		82.3	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		64.1	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		73.0	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		110	----	----	----	----
13C8-PFOA	----	0.0002	%		120	----	----	----	----

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Work Order : EB2032900
Client : ENVIRONMENTAL EARTH SCIENCES
Project : 720077

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TB01	----	----	----	----
			Sampling date / time	04-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB2032900-012	--------	--------	--------	--------
				Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
^ Total Xylenes	----	2	µg/L	<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	102	----	----	----	----
Toluene-D8	2037-26-5	2	%	95.4	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	103	----	----	----	----

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Work Order : EB2032900
Client : ENVIRONMENTAL EARTH SCIENCES
Project : 720077

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	10	138
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	23	134
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	35	154
2-Chlorophenol-D4	93951-73-6	42	153
2.4.6-Tribromophenol	118-79-6	26	157
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	34	156
Anthracene-d10	1719-06-8	37	153
4-Terphenyl-d14	1718-51-0	42	172
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	53	134
Toluene-D8	2037-26-5	60	131
4-Bromofluorobenzene	460-00-4	59	127
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	66	138
Toluene-D8	2037-26-5	79	120
4-Bromofluorobenzene	460-00-4	74	118

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2032900**	Page	: 1 of 16
Client	: **ENVIRONMENTAL EARTH SCIENCES**	Laboratory	: Environmental Division Brisbane
Contact	: MR ROBBIE JOHNS	Contact	: Andrew Epps
Address	: Unit 3/ 1 Ross Street NEWSTEAD QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: 07 3852 6666	Telephone	: +61 7 3552 8639
Project	: 720077	Date Samples Received	: 10-Dec-2020
Order number	: ----	Date Analysis Commenced	: 11-Dec-2020
C-O-C number	: ----	Issue Date	: 18-Dec-2020
Sampler	: D.WILSON		
Site	: Mornington Island		
Quote number	: EN/010/20		
No. of samples received	: 12		
No. of samples analysed	: 12		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Thomas Donovan		Brisbane Organics, Stafford, QLD

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Work Order : EB2032900
Client : ENVIRONMENTAL EARTH SCIENCES
Project : 720077

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3416362)									
EB2032892-038	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	10	10	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
EB2032900-002	BH02	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	25	33	27.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	10	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	6	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3416365)									
EB2032892-038	Anonymous	EA055: Moisture Content	----	0.1	%	15.2	15.2	0.00	0% - 50%
EB2032900-002	BH02	EA055: Moisture Content	----	0.1	%	3.7	3.5	5.65	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3416363)									
EB2032892-038	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	0.00	No Limit
EB2032900-002	BH02	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3416360)									
EB2032900-001	BH01	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

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Work Order : EB2032900
Client : ENVIRONMENTAL EARTH SCIENCES
Project : 720077

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3416360) - continued									
EB2032900-001	BH01	EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EB2032900-011	BD01	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

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Work Order : EB2032900
Client : ENVIRONMENTAL EARTH SCIENCES
Project : 720077

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3416360) - continued									
EB2032900-011	BD01	EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3416360)									
EB2032900-001	BH01	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EB2032900-011	BD01	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

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Project : 720077

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3416360) - continued									
EB2032900-011	BD01	EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3416358)									
EB2032892-038	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EB2032900-005	BH05	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

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Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3416358) - continued									
EB2032900-005	BH05	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3416359)									
EB2032892-038	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EB2032900-005	BH05	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3416361)									
EB2032892-038	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EB2032900-004	BH04	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3416359)									
EB2032892-038	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EB2032900-005	BH05	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3416361)									
EB2032892-038	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EB2032900-004	BH04	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 3416361)									
EB2032892-038	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EB2032900-004	BH04	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

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Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080: BTEXN (QC Lot: 3416361) - continued									
EB2032900-004	BH04	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3416364)									
EB2032900-001	BH01	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EB2032900-011	BD01	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3416364)									
EB2032900-001	BH01	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EB2032900-011	BD01	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3416364)									
EB2032900-001	BH01	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit

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Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3416364) - continued									
EB2032900-001	BH01	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2032900-011	BD01	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3416364)									
EB2032900-001	BH01	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2032900-011	BD01	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit

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Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3416364) - continued									
EB2032900-011	BD01	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3418540)									
EB2032786-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EB2032786-010	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3418540)									
EB2032786-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EB2032786-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 3418540)									
EB2032786-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EB2032786-010	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

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Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3416362)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	83.4 mg/kg	114	84.0	123
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
EG005T: Chromium	7440-47-3	2	mg/kg	<2	14.1 mg/kg	105	83.0	125
EG005T: Copper	7440-50-8	5	mg/kg	<5	50 mg/kg	94.8	86.0	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.4 mg/kg	94.8	84.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	11.8 mg/kg	104	81.5	118
EG005T: Zinc	7440-66-6	5	mg/kg	<5	148.7 mg/kg	97.4	80.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3416363)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	102	70.0	125
EP068A: Organochlorine Pesticides (OC) (QCLot: 3416360)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	107	54.0	121
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	106	80.1	134
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	111	49.0	121
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	113	75.5	136
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	108	61.0	122
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	65.0	130
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	104	70.0	130
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	108	58.0	118
EP068: Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	110	56.0	119
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	111	51.0	125
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	110	57.0	118
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	107	67.0	129
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	109	62.0	121
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	108	60.0	137
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.1	61.0	122
EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.1	60.0	123
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	52.0	125
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	88.3	55.0	125
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	99.0	70.0	130
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	80.9	55.0	129
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	86.3	53.0	136

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Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	*CAS Number*	*LOR*	*Unit*	*Result*	*Concentration*	*LCS*	*Low*	*High*
EP068A: Organochlorine Pesticides (OC) (QCLot: 3416360) - continued								
EP068: Sum of DDD + DDE + DDT	72-54-8/72-5 5-9/50-2	0.05	mg/kg	<0.05	----	----	----	----
EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3416360)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	97.4	41.0	114
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.9	25.0	120
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	64.8	35.0	135
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	71.7	44.0	131
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	113	70.0	131
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	70.0	130
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	96.1	60.0	122
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	82.9	64.0	125
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	103	69.0	115
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	107	66.0	120
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	91.3	57.0	118
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	108	57.2	135
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	105	62.0	127
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.6	58.2	131
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.9	55.0	106
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	58.2	125
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.2	61.0	123
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.8	57.0	124
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	36.0	35.0	127
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3416358)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	73.1	72.6	133
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	87.7	63.2	144
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	107	73.0	117
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	127	76.2	134
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	116	71.8	137
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	122	77.1	143
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	118	74.1	140
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	119	72.0	139
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	117	58.0	145
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	122	63.0	147
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	1.5 mg/kg	124	70.5	142
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	121	75.5	138
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	134	68.5	140

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Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Laboratory Control Spike (LCS) Report: Spike Recovery (%): LCS	Laboratory Control Spike (LCS) Report: Recovery Limits (%): Low	Laboratory Control Spike (LCS) Report: Recovery Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3416358) - continued								
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	122	58.4	143
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	116	52.1	149
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	123	64.6	140
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3416359)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	310 mg/kg	113	79.4	125
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	490 mg/kg	110	78.8	122
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3416361)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	18 mg/kg	92.3	59.7	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3416359)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	450 mg/kg	111	81.3	122
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	320 mg/kg	115	75.6	125
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3416361)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	22.5 mg/kg	92.7	58.1	124
EP080: BTEXN (QCLot: 3416361)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	91.0	66.8	115
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	76.4	68.8	116
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	76.2	68.5	116
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	80.8	69.7	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	81.4	72.2	116
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	74.5	73.2	116
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3416364)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	120	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	# 126	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	118	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	120	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	117	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	120	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3416364)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	129	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	118	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	117	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	117	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	123	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	120	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	125	69.0	133

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Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3416364) - continued								
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	128	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	114	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3416364)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	# 156	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	136	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	125	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	130	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	123	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	117	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	112	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3416364)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	113	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	133	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	114	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	108	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3418540)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	180 µg/L	102	66.8	122
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3418540)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	225 µg/L	90.2	65.1	123
EP080: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080: BTEXN (QCLot: 3418540)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	89.4	79.8	115
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	101	78.6	116
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	98.8	77.3	115
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	102	75.8	120
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	106	80.9	115
EP080: Total Xylenes	----	2	µg/L	<2	----	----	----	----

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Project : 720077

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080: BTEXN (QCLot: 3418540) - continued								
EP080: Sum of BTEX	----	1	µg/L	<1	----	----	----	----
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	87.5	77.8	116

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3416362)							
EB2032892-039	Anonymous	EG005T: Arsenic	7440-38-2	100 mg/kg	77.2	70.0	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	94.6	70.0	130
		EG005T: Chromium	7440-47-3	100 mg/kg	91.9	70.0	130
		EG005T: Copper	7440-50-8	100 mg/kg	93.2	70.0	130
		EG005T: Lead	7439-92-1	100 mg/kg	92.5	70.0	130
		EG005T: Nickel	7440-02-0	100 mg/kg	92.8	70.0	130
		EG005T: Zinc	7440-66-6	100 mg/kg	92.8	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3416363)							
EB2032892-039	Anonymous	EG035T: Mercury	7439-97-6	0.5 mg/kg	98.9	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3416360)							
EB2032900-002	BH02	EP068: gamma-BHC	58-89-9	0.5 mg/kg	114	70.0	136
		EP068: Heptachlor	76-44-8	0.5 mg/kg	104	65.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	104	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	108	67.0	129
		EP068: Endrin	72-20-8	0.5 mg/kg	108	60.0	137
		EP068: 4.4`-DDT	50-29-3	0.5 mg/kg	100.0	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3416360)							
EB2032900-002	BH02	EP068: Diazinon	333-41-5	0.5 mg/kg	112	70.0	131
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	98.5	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	98.1	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	78.0	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	90.3	70.0	134
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3416358)							
EB2032892-039	Anonymous	EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	104	70.0	130
		EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	118	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3416359)							

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Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3416359) - continued							
EB2032892-039	Anonymous	EP071: C10 - C14 Fraction	----	310 mg/kg	113	70.0	130
		EP071: C15 - C28 Fraction	----	490 mg/kg	113	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3416361)							
EB2032892-039	Anonymous	EP080: C6 - C9 Fraction	----	8 mg/kg	76.6	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3416359)							
EB2032892-039	Anonymous	EP071: >C10 - C16 Fraction	----	450 mg/kg	113	70.0	130
		EP071: >C16 - C34 Fraction	----	320 mg/kg	116	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3416361)							
EB2032892-039	Anonymous	EP080: C6 - C10 Fraction	C6_C10	8 mg/kg	71.3	70.0	130
EP080: BTEXN (QCLot: 3416361)							
EB2032892-039	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	85.8	70.0	130
		EP080: Toluene	108-88-3	2 mg/kg	70.7	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3416364)							
EB2032900-002	BH02	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	113	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	122	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	108	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	119	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	102	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	99.2	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3416364)							
EB2032900-002	BH02	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	130	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	121	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	114	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	112	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	116	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	122	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	118	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	128	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	101	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	101	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	112	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3416364)							
EB2032900-002	BH02	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	122	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	106	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	116	70.0	130

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Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3416364) - continued							
EB2032900-002	BH02	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	119	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	113	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	122	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	107	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3416364)							
EB2032900-002	BH02	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	128	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	132	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	131	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	113	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3418540)							
EB2032786-001	Anonymous	EP080: C6 - C9 Fraction	----	40 µg/L	118	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3418540)							
EB2032786-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	40 µg/L	110	70.0	130
EP080: BTEXN (QCLot: 3418540)							
EB2032786-001	Anonymous	EP080: Benzene	71-43-2	10 µg/L	99.1	70.0	130
		EP080: Toluene	108-88-3	10 µg/L	102	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2032900**	Page	: 1 of 10
Client	: **ENVIRONMENTAL EARTH SCIENCES**	Laboratory	: Environmental Division Brisbane
Contact	: MR ROBBIE JOHNS	Telephone	: +61 7 3552 8639
Project	: 720077	Date Samples Received	: 10-Dec-2020
Site	: Mornington Island	Issue Date	: 18-Dec-2020
Sampler	: D.WILSON	No. of samples received	: 12
Order number	: ----	No. of samples analysed	: 12

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

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Client	: ENVIRONMENTAL EARTH SCIENCES
Project	: 720077

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	QC-3416364-002	----	**Perfluoropentane sulfonic acid (PFPeS)**	2706-91-4	126 %	73.0-123%	**Recovery greater than upper control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-3416364-002	----	**Perfluorooctane sulfonamide (FOSA)**	754-91-6	156 %	67.0-137%	**Recovery greater than upper control limit**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
BH01,	BH02,	**08-Dec-2020**	**----**	----	----	**11-Dec-2020**	22-Dec-2020	✓
BH03,	BH04,							
BH05,	BH06,							
BH07,	BH08,							
BH09,	BH10,							
BD01								
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
BH01,	BH02,	**08-Dec-2020**	**14-Dec-2020**	06-Jun-2021	✓	**16-Dec-2020**	06-Jun-2021	✓
BH03,	BH04,							
BH05,	BH06,							
BH07,	BH08,							
BH09,	BH10,							
BD01								

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Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
BH01,	BH02,	**08-Dec-2020**	**14-Dec-2020**	05-Jan-2021	✓	**17-Dec-2020**	05-Jan-2021	✓
BH03,	BH04,							
BH05,	BH06,							
BH07,	BH08,							
BH09,	BH10,							
BD01								
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068)								
BH01,	BH02,	**08-Dec-2020**	**15-Dec-2020**	22-Dec-2020	✓	**15-Dec-2020**	24-Jan-2021	✓
BH03,	BH04,							
BH05,	BH06,							
BH07,	BH08,							
BH09,	BH10,							
BD01								
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068)								
BH01,	BH02,	**08-Dec-2020**	**15-Dec-2020**	22-Dec-2020	✓	**15-Dec-2020**	24-Jan-2021	✓
BH03,	BH04,							
BH05,	BH06,							
BH07,	BH08,							
BH09,	BH10,							
BD01								
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))								
BH01,	BH02,	**08-Dec-2020**	**15-Dec-2020**	22-Dec-2020	✓	**15-Dec-2020**	24-Jan-2021	✓
BH03,	BH04,							
BH05,	BH06,							
BH07,	BH08,							
BH09,	BH10,							
BD01								

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Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
BH01, BH02, BH03, BH04, BH05, BH06, BH07, BH08, BH09, BH10, BD01	**08-Dec-2020**	**11-Dec-2020**	22-Dec-2020	✓	**14-Dec-2020**	22-Dec-2020	✓
Soil Glass Jar - Unpreserved (EP071)							
BH01, BH02, BH03, BH04, BH05, BH06, BH07, BH08, BH09, BH10, BD01	**08-Dec-2020**	**15-Dec-2020**	22-Dec-2020	✓	**15-Dec-2020**	24-Jan-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
BH01, BH02, BH03, BH04, BH05, BH06, BH07, BH08, BH09, BH10, BD01	**08-Dec-2020**	**11-Dec-2020**	22-Dec-2020	✓	**14-Dec-2020**	22-Dec-2020	✓
Soil Glass Jar - Unpreserved (EP071)							
BH01, BH02, BH03, BH04, BH05, BH06, BH07, BH08, BH09, BH10, BD01	**08-Dec-2020**	**15-Dec-2020**	22-Dec-2020	✓	**15-Dec-2020**	24-Jan-2021	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
BH01, BH02, BH03, BH04, BH05, BH06, BH07, BH08, BH09, BH10, BD01	**08-Dec-2020**	**11-Dec-2020**	22-Dec-2020	✓	**14-Dec-2020**	22-Dec-2020	✓

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Matrix: **SOIL** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X)								
BH01,	BH02,	**08-Dec-2020**	**14-Dec-2020**	06-Jun-2021	✓	**14-Dec-2020**	23-Jan-2021	✓
BH03,	BH04,							
BH05,	BH06,							
BH07,	BH08,							
BH09,	BH10,							
BD01								
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X)								
BH01,	BH02,	**08-Dec-2020**	**14-Dec-2020**	06-Jun-2021	✓	**14-Dec-2020**	23-Jan-2021	✓
BH03,	BH04,							
BH05,	BH06,							
BH07,	BH08,							
BH09,	BH10,							
BD01								
EP231C: Perfluoroalkyl Sulfonamides								
HDPE Soil Jar (EP231X)								
BH01,	BH02,	**08-Dec-2020**	**14-Dec-2020**	06-Jun-2021	✓	**14-Dec-2020**	23-Jan-2021	✓
BH03,	BH04,							
BH05,	BH06,							
BH07,	BH08,							
BH09,	BH10,							
BD01								
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE Soil Jar (EP231X)								
BH01,	BH02,	**08-Dec-2020**	**14-Dec-2020**	06-Jun-2021	✓	**14-Dec-2020**	23-Jan-2021	✓
BH03,	BH04,							
BH05,	BH06,							
BH07,	BH08,							
BH09,	BH10,							
BD01								
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X)								
BH01,	BH02,	**08-Dec-2020**	**14-Dec-2020**	06-Jun-2021	✓	**14-Dec-2020**	23-Jan-2021	✓
BH03,	BH04,							
BH05,	BH06,							
BH07,	BH08,							
BH09,	BH10,							
BD01								

Matrix: **WATER** Evaluation: × = Holding time breach ; ✓ = Within holding time.

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Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP080)							
TB01	04-Dec-2020	14-Dec-2020	18-Dec-2020	✓	14-Dec-2020	18-Dec-2020	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber VOC Vial - Sulfuric Acid (EP080)							
TB01	04-Dec-2020	14-Dec-2020	18-Dec-2020	✓	14-Dec-2020	18-Dec-2020	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
TB01	04-Dec-2020	14-Dec-2020	18-Dec-2020	✓	14-Dec-2020	18-Dec-2020	✓

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Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	

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Client	: ENVIRONMENTAL EARTH SCIENCES
Project	: 720077

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
TRH Volatiles/BTEX	EP080	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
TRH Volatiles/BTEX	EP080	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
TRH Volatiles/BTEX	EP080	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
TRH Volatiles/BTEX	EP080	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard

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Client : ENVIRONMENTAL EARTH SCIENCES
Project : 720077

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions

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Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Sample Extraction for PFAS in solid matrices	ORG73	SOIL	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

17/12

CHAIN OF CUSTODY - ANALYSIS REQUEST FORM

Job No: 720077 Laboratory: ALS

Project Manager: R. Johns Sampler: D. Wilson Site Location: Mornington Island Sheet: 1 of 1

	No. of samples	Sample ID/ Depth	Anticipated Result (PID)/EC reading	Date sampled	Time sampled	Sample Matrix: Soil	Water	Sediment	Analysis Required: S12	S26	EP231x	W18	Sample-specific instructions/ notes
1	1	BH01		8/12	-	✓			✓	✓	✓		
2	1	BH02		8/12		✓			✓	✓	✓		
3	1	BH03		8/12		✓			✓	✓	✓		
4	1	BH04		8/12		✓			✓	✓	✓		
5	1	BH05		8/12		✓			✓	✓	✓		
6	1	BH06		8/12		✓			✓	✓	✓		
7	1	BH07		8/12		✓			✓	✓	✓		
8	1	BH08		8/12		✓			✓	✓	✓		
9	1	BH09		8/12		✓			✓	✓	✓		
10	1	BH10		8/12		✓			✓	✓	✓		
11	1	BD01		8/12		✓			✓	✓	✓		
12	2	TB01		4/12			✓					✓	
		TOTAL											

Environmental Division
Brisbane
Work Order Reference
EB2032900

Telephone : + 61-7-3243 7222

Turn Around *(circle)*: (NORMAL) 3 DAYS / 48 HRS / 24 HRS *(confirm with lab in advance if quick turn-around is required)*

Comments/ instructions:

Lab Quotation No. *(if applicable)*:

Send report to *(email address)*: rjohns@eesigroup.com

Cc: report to *(email address)*: dwilson@eesigroup.com

Cc: invoice to *(email address)*: accounts@eesigroup.com

	Name	Signature	Date	Time
Sent off Site/Office by:	D. Wilson		8/12/20	
Receiving Lab:	T. Riches		10/12/2020	1030
Receiving Lab:				

ENVIRONMENTAL EARTH SCIENCES
CONTAMINATION RESOLVED

Phone: (07) 3852 6666
Fax: (07) 3852 5666
PO Box: 3207, Newstead QLD 4006

Email: eesQLD@eesigroup.com

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Certificate of Analysis

Environmental Earth Sciences QLD
Unit 3, 1 Ross Street
Newstead
QLD 4006

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Attention: **Robbie Johns**

Report **762797-S**
Project name MORNINGTON ISLAND
Project ID 720077
Received Date Dec 10, 2020

Client Sample ID			**SD01**
Sample Matrix			**Soil**
Eurofins Sample No.			**B20-De21977**
Date Sampled			**Dec 08, 2020**
Test/Reference	LOR	Unit	
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	90
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5

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Client Sample ID			SD01
Sample Matrix			Soil
Eurofins Sample No.			B20-De21977
Date Sampled			Dec 08, 2020
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	120
p-Terphenyl-d14 (surr.)	1	%	121
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	0.1	mg/kg	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	76
Tetrachloro-m-xylene (surr.)	1	%	83
Organophosphorus Pesticides			
Azinphos-methyl	0.2	mg/kg	< 0.2
Bolstar	0.2	mg/kg	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2
Coumaphos	2	mg/kg	< 2
Demeton-S	0.2	mg/kg	< 0.2
Demeton-O	0.2	mg/kg	< 0.2
Diazinon	0.2	mg/kg	< 0.2

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Client Sample ID			SD01
Sample Matrix			Soil
Eurofins Sample No.			B20-De21977
Date Sampled			Dec 08, 2020
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Dichlorvos	0.2	mg/kg	< 0.2
Dimethoate	0.2	mg/kg	< 0.2
Disulfoton	0.2	mg/kg	< 0.2
EPN	0.2	mg/kg	< 0.2
Ethion	0.2	mg/kg	< 0.2
Ethoprop	0.2	mg/kg	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2
Fenthion	0.2	mg/kg	< 0.2
Malathion	0.2	mg/kg	< 0.2
Merphos	0.2	mg/kg	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2
Mevinphos	0.2	mg/kg	< 0.2
Monocrotophos	2	mg/kg	< 2
Naled	0.2	mg/kg	< 0.2
Omethoate	2	mg/kg	< 2
Phorate	0.2	mg/kg	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2
Ronnel	0.2	mg/kg	< 0.2
Terbufos	0.2	mg/kg	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2
Tokuthion	0.2	mg/kg	< 0.2
Trichloronate	0.2	mg/kg	< 0.2
Triphenylphosphate (surr.)	1	%	int
Heavy Metals			
Arsenic	2	mg/kg	37
Cadmium	0.5	mg/kg	< 0.5
Chromium	5	mg/kg	110
Copper	5	mg/kg	13
Lead	5	mg/kg	23
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	6.9
Zinc	5	mg/kg	8.7
% Moisture	1	%	2.3
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5

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Client Sample ID			SD01
Sample Matrix			Soil
Eurofins Sample No.			B20-De21977
Date Sampled			Dec 08, 2020
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
13C4-PFBA (surr.)	1	%	94
13C5-PFPeA (surr.)	1	%	93
13C5-PFHxA (surr.)	1	%	115
13C4-PFHpA (surr.)	1	%	112
13C8-PFOA (surr.)	1	%	72
13C5-PFNA (surr.)	1	%	96
13C6-PFDA (surr.)	1	%	89
13C2-PFUnDA (surr.)	1	%	90
13C2-PFDoDA (surr.)	1	%	93
13C2-PFTeDA (surr.)	1	%	81
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10
13C8-FOSA (surr.)	1	%	92
D3-N-MeFOSA (surr.)	1	%	131
D5-N-EtFOSA (surr.)	1	%	70
D7-N-MeFOSE (surr.)	1	%	142
D9-N-EtFOSE (surr.)	1	%	102
D5-N-EtFOSAA (surr.)	1	%	101
D3-N-MeFOSAA (surr.)	1	%	110
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5
13C3-PFBS (surr.)	1	%	118
18O2-PFHxS (surr.)	1	%	103
13C8-PFOS (surr.)	1	%	84
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5
13C2-4:2 FTS (surr.)	1	%	67

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Client Sample ID			SD01
Sample Matrix			Soil
Eurofins Sample No.			B20-De21977
Date Sampled			Dec 08, 2020
Test/Reference	LOR	Unit	
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
13C2-6:2 FTSA (surr.)	1	%	167
13C2-8:2 FTSA (surr.)	1	%	81
13C2-10:2 FTSA (surr.)	1	%	120
PFASs Summations			
Sum (PFHxS + PFOS)*	5	ug/kg	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50

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Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B10			
BTEX	Melbourne	Dec 15, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Dec 15, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Brisbane	Dec 15, 2020	0 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Melbourne	Dec 15, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Brisbane	Dec 15, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Brisbane	Dec 15, 2020	14 Days
- Method: USEPA M 8270 (LTM-ORG-2130 PAH & Phenols in Soil & Water by GC-MS)			
Organochlorine Pesticides	Melbourne	Dec 16, 2020	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Dec 16, 2020	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)			
Metals M8	Brisbane	Dec 15, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Brisbane	Dec 16, 2020	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Dec 15, 2020	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Dec 15, 2020	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Dec 15, 2020	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Dec 15, 2020	180 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Company Name:	Environmental Earth Sciences QLD	**Order No.:**	
Address:	Unit 3, 1 Ross Street Newstead QLD 4006	**Report #:** **Phone:** **Fax:**	762797 07 3852 6666 07 3852 5666
Project Name:	MORNINGTON ISLAND		
Project ID:	720077		

Received:	Dec 10, 2020 1:30 PM
Due:	Dec 17, 2020
Priority:	5 Day
Contact Name:	Robbie Johns

Eurofins Analytical Services Manager : Peter Brand

Sample Detail						Moisture Set	Eurofins Suite B10	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							X	
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794						X	X	X
Perth Laboratory - NATA Site # 23736								
Mayfield Laboratory								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	SD01	Dec 08, 2020		Soil	B20-De21977	X	X	X
Test Counts						1	1	1

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram | **mg/L:** milligrams per litre | **ug/L:** micrograms per litre

ppm: Parts per million | **ppb:** Parts per billion | **%:** Percentage

org/100mL: Organisms per 100 millilitres | **NTU:** Nephelometric Turbidity Units | **MPN/100mL:** Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	

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Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	

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Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	88			70-130	Pass	
Toluene	%	84			70-130	Pass	
Ethylbenzene	%	87			70-130	Pass	
m&p-Xylenes	%	92			70-130	Pass	
Xylenes - Total*	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	78			70-130	Pass	
TRH C6-C10	%	83			70-130	Pass	
TRH >C10-C16	%	116			70-130	Pass	

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Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery									
Total Recoverable Hydrocarbons									
TRH C6-C9			%	97			70-130	Pass	
LCS - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions									
TRH C10-C14			%	116			70-130	Pass	
LCS - % Recovery									
Polycyclic Aromatic Hydrocarbons									
Acenaphthene			%	92			70-130	Pass	
Acenaphthylene			%	89			70-130	Pass	
Anthracene			%	96			70-130	Pass	
Benz(a)anthracene			%	83			70-130	Pass	
Benzo(a)pyrene			%	82			70-130	Pass	
Benzo(b&j)fluoranthene			%	80			70-130	Pass	
Benzo(g.h.i)perylene			%	70			70-130	Pass	
Benzo(k)fluoranthene			%	89			70-130	Pass	
Chrysene			%	91			70-130	Pass	
Dibenz(a.h)anthracene			%	71			70-130	Pass	
Fluoranthene			%	83			70-130	Pass	
Fluorene			%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	71			70-130	Pass	
Naphthalene			%	86			70-130	Pass	
Phenanthrene			%	94			70-130	Pass	
Pyrene			%	85			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
BTEX				Result 1					
Benzene	B20-De15958	NCP	%	107			70-130	Pass	
Toluene	B20-De15958	NCP	%	115			70-130	Pass	
Ethylbenzene	B20-De15958	NCP	%	107			70-130	Pass	
m&p-Xylenes	B20-De15958	NCP	%	114			70-130	Pass	
o-Xylene	B20-De15958	NCP	%	102			70-130	Pass	
Xylenes - Total*	B20-De15958	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	B20-De15958	NCP	%	93			70-130	Pass	
TRH C6-C10	B20-De15958	NCP	%	98			70-130	Pass	
TRH >C10-C16	B20-De24400	NCP	%	120			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	B20-De15958	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	B20-De24400	NCP	%	120			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	B20-De24400	NCP	%	129			70-130	Pass	
Acenaphthylene	B20-De24400	NCP	%	124			70-130	Pass	
Anthracene	B20-De24400	NCP	%	128			70-130	Pass	
Benz(a)anthracene	B20-De24400	NCP	%	115			70-130	Pass	
Benzo(a)pyrene	B20-De24400	NCP	%	114			70-130	Pass	
Benzo(b&j)fluoranthene	B20-De24400	NCP	%	115			70-130	Pass	
Benzo(g.h.i)perylene	B20-De24400	NCP	%	88			70-130	Pass	
Benzo(k)fluoranthene	B20-De24400	NCP	%	125			70-130	Pass	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chrysene	B20-De24400	NCP	%	130			70-130	Pass	
Dibenz(a.h)anthracene	B20-De24400	NCP	%	97			70-130	Pass	
Fluoranthene	B20-De24400	NCP	%	116			70-130	Pass	
Fluorene	B20-De24400	NCP	%	130			70-130	Pass	
Indeno(1.2.3-cd)pyrene	B20-De24400	NCP	%	89			70-130	Pass	
Naphthalene	B20-De24400	NCP	%	120			70-130	Pass	
Phenanthrene	B20-De24400	NCP	%	129			70-130	Pass	
Pyrene	B20-De24400	NCP	%	119			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M20-De38586	NCP	%	114			70-130	Pass	
4.4'-DDD	M20-De38586	NCP	%	116			70-130	Pass	
4.4'-DDE	M20-De38586	NCP	%	112			70-130	Pass	
4.4'-DDT	M20-De38586	NCP	%	100			70-130	Pass	
a-BHC	M20-De38586	NCP	%	103			70-130	Pass	
Aldrin	M20-De38586	NCP	%	116			70-130	Pass	
b-BHC	M20-De38586	NCP	%	117			70-130	Pass	
d-BHC	M20-De38586	NCP	%	107			70-130	Pass	
Dieldrin	M20-De38586	NCP	%	107			70-130	Pass	
Endosulfan I	M20-De38586	NCP	%	113			70-130	Pass	
Endosulfan II	M20-De38586	NCP	%	103			70-130	Pass	
Endosulfan sulphate	M20-De38586	NCP	%	98			70-130	Pass	
Endrin	M20-De38586	NCP	%	106			70-130	Pass	
Endrin aldehyde	M20-De38586	NCP	%	104			70-130	Pass	
Endrin ketone	M20-De38586	NCP	%	114			70-130	Pass	
g-BHC (Lindane)	M20-De38586	NCP	%	107			70-130	Pass	
Heptachlor	M20-De38586	NCP	%	97			70-130	Pass	
Heptachlor epoxide	M20-De38586	NCP	%	111			70-130	Pass	
Hexachlorobenzene	M20-De38586	NCP	%	108			70-130	Pass	
Methoxychlor	M20-De38586	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B20-De24400	NCP	%	83			75-125	Pass	
Cadmium	B20-De24400	NCP	%	97			75-125	Pass	
Chromium	B20-De24400	NCP	%	92			75-125	Pass	
Copper	B20-De24400	NCP	%	114			75-125	Pass	
Lead	B20-De24400	NCP	%	103			75-125	Pass	
Mercury	B20-De24400	NCP	%	111			75-125	Pass	
Nickel	B20-De24400	NCP	%	100			75-125	Pass	
Zinc	B20-De24400	NCP	%	100			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B20-De29872	NCP	%	100			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B20-De29872	NCP	%	115			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B20-De29872	NCP	%	137			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B20-De29872	NCP	%	100			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B20-De29872	NCP	%	112			50-150	Pass	
Perfluorononanoic acid (PFNA)	B20-De29872	NCP	%	112			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B20-De29872	NCP	%	81			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B20-De29872	NCP	%	89			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B20-De29872	NCP	%	114			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B20-De29872	NCP	%	116			50-150	Pass	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorotetradecanoic acid (PFTeDA)	B20-De29872	NCP	%	109			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B20-De29872	NCP	%	88			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B20-De29872	NCP	%	91			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B20-De29872	NCP	%	99			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B20-De29872	NCP	%	78			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B20-De29872	NCP	%	89			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B20-De29872	NCP	%	98			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B20-De29872	NCP	%	74			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B20-De29872	NCP	%	87			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B20-De29872	NCP	%	106			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B20-De29872	NCP	%	99			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B20-De29872	NCP	%	93			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B20-De29872	NCP	%	137			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B20-De29872	NCP	%	95			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B20-De29872	NCP	%	81			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B20-De29872	NCP	%	92			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B20-De29872	NCP	%	88			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B20-De29872	NCP	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B20-De29872	NCP	%	107			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B20-De29872	NCP	%	99			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	B20-De21977	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	B20-De21977	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	B20-De21977	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	B20-De21977	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	B20-De21977	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	B20-De21977	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

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Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	B20-De21977	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	B20-De21977	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	B20-De21977	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	B20-De21977	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	B20-De21977	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	B20-De21977	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	B20-De21977	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	B20-De21977	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	B20-De21977	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M20-De38625	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M20-De38625	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M20-De27426	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

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Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	M20-De38625	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	M20-De38625	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	M20-De38625	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	M20-De38625	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B20-De15947	NCP	mg/kg	3.8	3.8	2.0	30%	Pass	
Cadmium	B20-De15947	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chromium	B20-De15947	NCP	mg/kg	41	42	2.0	30%	Pass	
Copper	B20-De15947	NCP	mg/kg	32	33	1.0	30%	Pass	
Lead	B20-De15947	NCP	mg/kg	13	14	5.0	30%	Pass	
Mercury	B20-De15917	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	B20-De15947	NCP	mg/kg	17	18	6.0	30%	Pass	
Zinc	B20-De15947	NCP	mg/kg	54	57	5.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	B20-De21977	CP	%	2.3	2.6	15	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

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Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorononanoic acid (PFNA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	P20-De25040	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	P20-De25040	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	P20-De25040	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	P20-De25040	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

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Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised By

Peter Brand	Analytical Services Manager
Jonathon Angell	Senior Analyst-Organic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Sarah McCallion	Senior Analyst-PFAS (QLD)
Steven Trout	Senior Analyst-Metal (QLD)
Vivian Wang	Senior Analyst-Volatile (VIC)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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Certificate of Analysis

Environmental Earth Sciences QLD
Unit 3, 1 Ross Street
Newstead
QLD 4006

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Attention: **Robbie Johns**

Report **766201-S**
Project name MORNINGTON ISLAND
Project ID 720077
Received Date Jan 06, 2021

Client Sample ID			**SD01**
Sample Matrix			**Soil**
Eurofins Sample No.			**B21-Ja01489**
Date Sampled			**Dec 08, 2020**
Test/Reference	LOR	Unit	
Chromium (hexavalent)	1	mg/kg	< 1
Chromium (trivalent)	5	mg/kg	97
% Moisture	1	%	2.3
Heavy Metals			
Chromium	5	mg/kg	97

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Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Chromium (speciated)			
Chromium (hexavalent)	Melbourne	Jan 06, 2021	28 Days
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Heavy Metals	Melbourne	Jan 06, 2021	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Brisbane	Jan 06, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

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Company Name:	Environmental Earth Sciences QLD	**Order No.:**	
Address:	Unit 3, 1 Ross Street Newstead QLD 4006	**Report #:** **Phone:** **Fax:**	766201 07 3852 6666 07 3852 5666
Project Name:	MORNINGTON ISLAND		
Project ID:	720077		

Received:	Jan 6, 2021 12:03 PM
Due:	Jan 13, 2021
Priority:	5 Day
Contact Name:	Robbie Johns

Eurofins Analytical Services Manager : Peter Brand

Sample Detail						Chromium (speciated)	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							X
Perth Laboratory - NATA Site # 23736							
Mayfield Laboratory							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	SD01	Dec 08, 2020		Soil	B21-Ja01489	X	X
Test Counts						1	1

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram | **mg/L:** milligrams per litre | **ug/L:** micrograms per litre

ppm: Parts per million | **ppb:** Parts per billion | **%:** Percentage

org/100mL: Organisms per 100 millilitres | **NTU:** Nephelometric Turbidity Units | **MPN/100mL:** Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

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Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chromium (hexavalent)			mg/kg	< 1			1	Pass	
Method Blank									
Heavy Metals									
Chromium			mg/kg	< 5			5	Pass	
LCS - % Recovery									
Chromium (hexavalent)			%	105			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Chromium			%	116			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M21-Ja01639	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Chromium	P20-De43086	NCP	%	106			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M21-Ja01638	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium	B21-Ja01722	NCP	mg/kg	96	90	6.0	30%	Pass	

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Comments

Sample Integrity

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

Authorised By

Ryan Gilbert	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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Company Name:	Environmental Earth Sciences QLD	**Order No.:**	
Address:	Unit 3, 1 Ross Street Newstead QLD 4006	**Report #:**	762797
		Phone:	07 3852 6666
		Fax:	07 3852 5666
Project Name:	MORNINGTON ISLAND		
Project ID:	720077		

Received:	Dec 10, 2020 1:30 PM
Due:	Dec 17, 2020
Priority:	5 Day
Contact Name:	Robbie Johns

Eurofins Analytical Services Manager : Peter Brand

Sample Detail						Moisture Set	Eurofins Suite B10	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							X	
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794						X	X	X
Perth Laboratory - NATA Site # 23736								
Mayfield Laboratory								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	SD01	Dec 08, 2020		Soil	B20-De21977	X	X	X
Test Counts						1	1	1

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Sample Receipt Advice

Company name:	Environmental Earth Sciences QLD
Contact name:	Robbie Johns
Project name:	MORNINGTON ISLAND
Project ID:	720077
Turnaround time:	5 Day
Date/Time received	Dec 10, 2020 1:30 PM
Eurofins reference	762797

Sample Information

☐	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
☐	All samples have been received as described on the above COC.
☐	COC has been completed correctly.
☐	Attempt to chill was evident.
☐	Appropriately preserved sample containers have been used.
☐	All samples were received in good condition.
☐	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
☐	Appropriate sample containers have been used.
☐	Sample containers for volatile analysis received with zero headspace.
☐	Split sample sent to requested external lab.
☐	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Peter Brand on phone : or by email: PeterBrand@eurofins.com

Results will be delivered electronically via email to Robbie Johns - rjohns@environmentalearthsciences.com.

Note: A copy of these results will also be delivered to the general Environmental Earth Sciences QLD email address.

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Company Name:	Environmental Earth Sciences QLD	**Order No.:**	
Address:	Unit 3, 1 Ross Street Newstead QLD 4006	**Report #:** **Phone:** **Fax:**	766201 07 3852 6666 07 3852 5666
Project Name:	MORNINGTON ISLAND		
Project ID:	720077		

Received:	Jan 6, 2021 12:03 PM
Due:	Jan 13, 2021
Priority:	5 Day
Contact Name:	Robbie Johns

Eurofins Analytical Services Manager : Peter Brand

Sample Detail						Chromium (speciated)	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							X
Perth Laboratory - NATA Site # 23736							
Mayfield Laboratory							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	SD01	Dec 08, 2020		Soil	B21-Ja01489	X	X
Test Counts						1	1

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Sample Receipt Advice

Company name:	Environmental Earth Sciences QLD
Contact name:	Robbie Johns
Project name:	MORNINGTON ISLAND
Project ID:	720077
Turnaround time:	5 Day
Date/Time received	Jan 6, 2021 12:03 PM
Eurofins reference	766201

Sample Information

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CHAIN OF CUSTODY - ANALYSIS REQUEST FORM

Project Manager: R. Johns | Sampler: D. Wilson | Site Location: Mornington Island | Job No: 720077 | Laboratory: Eurofins | Sheet: 1 of 1

No. of samples	Sample ID/ Depth	Anticipated Result (PID)/EC reading	Date sampled	Time sampled	Sample Matrix: Soil	Water	Sediment	Analysis Required	Sample-specific instructions/ notes
1	SD01		8/12		✓			✓ BIO ✓ 28 PFAS	
TOTAL									

#767977

Turn Around *(circle)*: NORMAL / 3 DAYS / 48 HRS / 24 HRS *(confirm with lab in advance if quick turn-around is required)*

Comments/ Instructions:

Lab Quotation No. *(if applicable)*:

Send report to *(email address)*: johns@eesigroup.com

Cc: report to *(email address)*: dwilson@eesigroup.com

Cc: invoice to *(email address)*: accounts@eesigroup.com

Sent off Site/Office by:

Name: D. Wilson | Signature: | Date: 8/12/20 | Time: 1230

Receiving Lab: Eurofins | ARC | 10/12/20

Receiving Lab:

Date Received: 10/12 1130
Temp: 3.5 No
Temp: 3.0
Correction:
Final Temp:

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