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In Situ Excavated Natural Material (ENM) Statement of Compliance

Eileen O'Connor Catholic School

84 Gavenlock Road, Mardi, NSW 2259

July 2024

Raw Earth Environmental Pty Ltd

ABN: 92 635 583 327

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REPORT DISTRIBUTION

Report Title	In Situ ENM Statement of Compliance
Site Address	Eileen O'Connor Catholic School, 84 Gavenlock Road, Mardi, NSW 2259
Lot/DP	Lot 9 DP 3368
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Date	17th July 2024
Raw Earth Environmental Pty Ltd ACN: 635 583 327	Enquiries: hello@rawearthenvironmental.com.au www.rawearthenvironmental.com.au

1.0: Introduction

Raw Earth Environmental (Raw Earth) were commissioned to prepare this Statement of Compliance for the beneficial re-use of soil associated with the removal of in situ material situated at the Eileen O'Connor Catholic School, 84 Gavenlock Road, Mardi, NSW 2259 (referred to herein as the site). Refer to Figure 1, **Appendix A** for the site location plan.

1.1: Background

It is understood that certain areas of in situ soils at the site may be surplus to the development works and require beneficial reuse offsite. As such, samples were collected for ENM analysis. This report responds the requirement No 16 under the Planning Secretary's Environmental Assessment Requirements (SEARS) dated 19th February 2024.

2.0: Site Inspection

A site inspection and sampling program were undertaken by Raw Earth Environmental Consultants, on the 15th and 16th July 2024. All sampling was undertaken in accordance with the requirements of the material-specific Order and Exemption published by the NSW EPA; being the ***Excavated Natural Material Order and Exemption (2014)***.

A minimum of twenty four (24) sampling test pit locations were advanced via the use of hand tools and an excavator, with samples being collected evenly across the anticipated soil disturbance area of site, as well as areas where suspected fill may be present – including areas surrounding a building pad and a dam wall. Reference to the sample locations can be found in Figure 2, **Appendix A**.

2.1: Sampling

Via the use of an excavator and hand tools, test pit locations were advance from 0.3 meters below ground level (mBGL) to 1.8 mBGL relevant to known excavation depths at each section of site. Discrete soil samples were collected by hand directly off the excavator bucket or shovel from each sample location. All samples were placed into large clean snap lock bags (physical composition testing) and clean glass sampling jars provided by the laboratory (chemical analysis). Once collected, samples were stored in a chilled and insulated eskies and transported directly to the National Association of Testing Authority (NATA) accredited laboratory for analysis. Each sample was analysed for the chemicals and physical parameters outlined in Table 4 of the ***NSW EPA ENM Order.***

A Photolog presenting the site based inspection is presented in **Appendix B.**

2.2: Soil Analytical Results

A review of the results indicates that the concentrations of all analytes tested met the criteria presented in Table 4 of the ***NSW ENM Order*** with exception of nickel concentrations in S19 (0.5 mBGL) and S23 (0.3 mBGL) which exceeded the Maximum Average and Absolute Maximum, respectively. As such, soils surrounding S19 to 0.5 mBGL and S23 to 0.3 mBGL do not meet requirements for offsite beneficial reuse.

The analytical chemical results table is presented in **Appendix C.** NATA accredited laboratory transcripts are provided in **Appendix D.**

3.0: DISCUSSION

With the exception of soils in S19 (0.5 mBGL) and S23 (0.3 mBGL), results have been reported as being less than both the Absolute Maximum concentrations and Maximum Average concentrations, and considering the homogenous, naturally occurring profile of the soils free from any anthropogenic sources of contaminants, such as brick, concrete, or debris, as well as no indications of staining, odour, or ACM. As such, soils are able to be applied to land as engineering fill or beneficially reused off site in meeting requirements of the ***Excavated Natural Material Order and Exemption (2014).***

The **ENM Order** and **Exemption (2014)** have the following requirements for notification and record keeping when carrying out work. These notification and record keeping requirements are satisfied by keeping hold of this Statement of Compliance for the 6 years required.

Notification:

On or before each transaction, the generator must provide the following to each person to whom the generator supplies the excavated natural material:

- A written statement of compliance certifying that all the requirements set out in the respective **Order** have been met (this report);
- A copy of the **Exemption**, or a link to the EPA website where they can be found; and
- A copy of the **Order**, or a link to the EPA website where they can be found.

A copy of the **Orders** and **Exemptions** are appended to this report (**Appendix E**).

Record Keeping and Reporting:

Any person who applies or intends to apply these materials to land as fill must keep a written record of the following for a period of six years:

- The quantity of any materials received; and
- The name and address of the supplier of the materials received.

Should you have any queries about this Statement of Compliance, please don't hesitate to contact me directly.

Yours sincerely,

Jacques Chiomey

Senior Environmental Scientist- Raw Earth Environmental

Appendices

Appendix A: Figures

Appendix B: Photograph Log

Appendix C: Analytical Soil Results Tables

Appendix D: NATA Endorsed Laboratory Transcripts

Appendix E: ENM Order 2014 & EMN Exemption 2014

APPENDIX A: FIGURES

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Site location

Figure 1:
Site Location Plan

Project:
ENM Statement of Compliance:
84 Gavenlock Road, Mardi NSW 2259

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Investigation Area Boundary (approximate)

Test Pit Sample Location (approximate)

Dam Area

1.8m excavation area

Figure 2:
Sampling Plan

Project:
ENM Statement of Compliance:
84 Gavenlock Road, Mardi NSW 2259

APPENDIX B: PHOTOGRAPHIC LOG

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Photo 1: Image showing natural sands situated beneath grass layer. Much of the soils profiles on site were noted to be consistent with this.

Photo 2: Deeper test pit excavation location at location “S1”. Natural sands encountered.

Photo 3: PID readings taken from all sample locations to assess for VOCs.

Photo 4: Image showing excavator advancing test pit excavation sample location “S20”. While fill material was noted in this sample location, material sampled still meets the ENM criteria for classification. No asbestos detected.

Photo 5: Excavator advancing test pit excavation sample location on site.

Photo 6: Close-up image of ENM material noted across the majority of the site.

APPENDIX C: ANALYTICAL SOIL RESULTS TABLES

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				Mass	Inorganics		Particulates						
				Initial Weight	Conductivity (1:5 aqueous extract)	pH (1:5 aqueous extract)	Bitumen	Cloth	Paint	Paper	% Plastic	Rubber	Wood
				KG	dS/m	-	%	%	%	%	%	%	%
EQL				0.01	10	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05
NSW 2014 Excavated Natural Material (Max Average)					1.5	5-9	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%
NSW 2014 Excavated Natural Material (Absolute Max)					3	4.5-10	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%
Lab Report Number	**Field ID**	**Date**	**Matrix Type**										
1114214	**S1-0.5**	**01 Jul 2024**	**Soil**	**9.3**	<0.01	**5.5**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S3**	**01 Jul 2024**	**Soil**	**11**	<0.01	**5.8**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S6**	**01 Jul 2024**	**Soil**	**11**	<0.01	**7.2**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S7-1.8**	**01 Jul 2024**	**Soil**	**10**	**0.01**	**6.3**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S8**	**01 Jul 2024**	**Soil**	**12**	<0.01	**5.9**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S10**	**01 Jul 2024**	**Soil**	**6.9**	**0.017**	**5.2**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S11**	**01 Jul 2024**	**Soil**	**12**	**0.012**	**6.2**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S13**	**01 Jul 2024**	**Soil**	**6.7**	**0.013**	**6.2**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S15**	**01 Jul 2024**	**Soil**	**10**	**0.086**	**5.5**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S16**	**01 Jul 2024**	**Soil**	**7.4**	<0.01	**6.3**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S17**	**01 Jul 2024**	**Soil**	**10**	<0.01	**8.3**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S17-1.8**	**01 Jul 2024**	**Soil**	**9.6**	**0.012**	**7.4**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S19**	**01 Jul 2024**	**Soil**	**12**	<0.01	**8.0**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S20**	**01 Jul 2024**	**Soil**	**11**	<0.01	**7.6**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S21**	**01 Jul 2024**	**Soil**	**11**	<0.01	**5.1**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S22**	**01 Jul 2024**	**Soil**	**8.9**	<0.01	**6.0**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S23**	**01 Jul 2024**	**Soil**	**8.2**	**0.051**	**7.3**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1114214	**S24**	**01 Jul 2024**	**Soil**	**9.1**	<0.01	**6.5**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Statistics													
Maximum Concentration				**12**	**86**	**8.3**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Environmental Standards
NSW EPA, November 2014, NSW 2014 Excavated Natural Material (Absolute Max)
NSW EPA, November 2014, NSW 2014 Excavated Natural Material (Max Average)

S00360
84 Gavenlock Road, Mardi NSW, 2259
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				Metals								Benzene, Toluene, Ethylbenzene and Xylenes (BTEX)						
				Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Naphthalene (VOC)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total
				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
EQL				2	0.4	5	5	5	0.1	5	5	0.5	0.1	0.1	0.1	0.2	0.1	0.3
NSW 2014 Excavated Natural Material (Max Average)				20	0.5	75	100	50	0.5	30	150							
NSW 2014 Excavated Natural Material (Absolute Max)				40	1	150	200	100	1	60	300		0.5	65	25			15
Lab Report Number	**Field ID**	**Date**	**Matrix Type**															
1114214	**S1-0.5**	**01 Jul 2024**	**Soil**	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S3**	**01 Jul 2024**	**Soil**	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S6**	**01 Jul 2024**	**Soil**	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S7-1.8**	**01 Jul 2024**	**Soil**	<2	<0.4	**5.9**	<5	<5	<0.1	<5	<5	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S8**	**01 Jul 2024**	**Soil**	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S10**	**01 Jul 2024**	**Soil**	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S11**	**01 Jul 2024**	**Soil**	**7.6**	<0.4	**25**	<5	**9.9**	<0.1	<5	<5	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S13**	**01 Jul 2024**	**Soil**	<2	<0.4	**7.3**	<5	**5.5**	<0.1	<5	**8.3**	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S15**	**01 Jul 2024**	**Soil**	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S16**	**01 Jul 2024**	**Soil**	**2.9**	<0.4	**9.1**	<5	**5.2**	<0.1	<5	**8.1**	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S17**	**01 Jul 2024**	**Soil**	**7.8**	<0.4	**32**	**11**	**8.1**	<0.1	**22**	**19**	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S17-1.8**	**01 Jul 2024**	**Soil**	**4.6**	<0.4	**26**	**8.7**	**8.4**	<0.1	**19**	**18**	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S19**	**01 Jul 2024**	**Soil**	**7.2**	<0.4	**43**	**17**	**11**	<0.1	**32**	**27**	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S20**	**01 Jul 2024**	**Soil**	**7.4**	<0.4	**38**	**15**	**8.9**	<0.1	**29**	**35**	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S21**	**01 Jul 2024**	**Soil**	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S22**	**01 Jul 2024**	**Soil**	<2	<0.4	**5.3**	<5	<5	<0.1	<5	<5	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S23**	**01 Jul 2024**	**Soil**	**2.8**	<0.4	**60**	**32**	**5.7**	<0.1	**66**	**65**	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
1114214	**S24**	**01 Jul 2024**	**Soil**	**6.4**	<0.4	**18**	<5	**9.6**	<0.1	<5	**52**	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
Statistics																		
Maximum Concentration				**7.8**	<0.4	**60**	**32**	**11**	<0.1	**66**	**65**	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3

Environmental Standards
NSW EPA, November 2014, NSW 2014 Excavated Natural Material (Absolute Max)
NSW EPA, November 2014, NSW 2014 Excavated Natural Material (Max Average)

				Total Petroleum Hydrocarbons (TPH) / Total Recoverable Hydrocarbons (TRH)												
				C6-C9	C10-C14	C15-C28	C29-C36	C6-C10	>C10-C16	>C16-C34	C10-C36	>C34-C40	>C10-C40 (Sum of Total)	F1 (C6-C9 minus BTEX	F2 (>C10-C16 minus Naphthalene)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				20	20	50	50	20	50	100	50	100	100	20	50
NSW 2014 Excavated Natural Material (Max Average)											250				
NSW 2014 Excavated Natural Material (Absolute Max)											500				
Lab Report Number	**Field ID**	**Date**	**Matrix Type**												
1114214	**S1-0.5**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S3**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S6**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S7-1.8**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S8**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S10**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S11**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S13**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S15**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S16**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S17**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S17-1.8**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S19**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S20**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S21**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S22**	**01 Jul 2024**	**Soil**	<20	**21**	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S23**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
1114214	**S24**	**01 Jul 2024**	**Soil**	<20	<20	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50
Statistics															
Maximum Concentration				<20	**21**	<50	<50	<20	<50	<100	<50	<100	<100	<20	<50

Environmental Standards

NSW EPA, November 2014, NSW 2014 Excavated Natural Material (Absolute Max)
NSW EPA, November 2014, NSW 2014 Excavated Natural Material (Max Average)

				Polycyclic Aromatic Hydrocarbons (PAHs)																			
				Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)
				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	mg/kg	mg/kg	mg/kg
EQL				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	0.5	0.5	0.5
NSW 2014 Excavated Natural Material (Max Average)								0.5															20
NSW 2014 Excavated Natural Material (Absolute Max)								1															40
Lab Report Number	**Field ID**	**Date**	**Matrix Type**																				
1114214	**S1-0.5**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S3**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S6**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S7-1.8**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S8**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S10**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S11**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S13**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S15**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S16**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S17**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S17-1.8**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S19**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S20**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S21**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S22**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S23**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
1114214	**S24**	**01 Jul 2024**	**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	**0.6**	**1.2**	<0.5	<0.5
Statistics																							
Maximum Concentration				<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	**0.6**	**1.2**	<0.5	<0.5

Environmental Standards

NSW EPA, November 2014, NSW 2014 Excavated Natural Material (Absolute Max)

NSW EPA, November 2014, NSW 2014 Excavated Natural Material (Max Average)

APPENDIX D: NATA ENDORSED LABORATORY TRANSCRIPTS

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Raw Earth Environmental P/L
Address: 3/17 Tasman Way
Byron Bay
NSW 2481

Project Name: DSI-EILEEN O'CONNOR
Project ID: s00360

Order No.:
Report #: 1114214
Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
Due: Jul 10, 2024
Priority: 5 Day
Contact Name: Jacques Chiomey

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail	Asbestos - WA guidelines	E.coli (MPN)	HOLD	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254							X					
Sydney Laboratory - NATA # 1261 Site # 1218217	X		X	X	X			X	X	X	X	X
External Laboratory		X				X						

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	S1-0.5	Jul 01, 2024		Soil	S24-Jl0008861								X	X			
2	S3	Jul 01, 2024		Soil	S24-Jl0008862								X	X			
3	S6	Jul 01, 2024		Soil	S24-Jl0008863								X	X			
4	S8	Jul 01, 2024		Soil	S24-Jl0008864								X	X			
5	S11	Jul 01, 2024		Soil	S24-Jl0008865								X	X			
6	S17	Jul 01, 2024		Soil	S24-Jl0008866								X	X			
7	S17-1.8	Jul 01, 2024		Soil	S24-Jl0008867								X	X			
8	S19	Jul 01, 2024		Soil	S24-Jl0008868								X	X			
9	S20	Jul 01, 2024		Soil	S24-Jl0008869								X	X			
10	S21	Jul 01, 2024		Soil	S24-Jl0008870								X	X			
11	QA1	Jul 01, 2024		Soil	S24-Jl0008871								X		X		
12	TS1	Jul 01, 2024		Trip Spike (liquid)	S24-Jl0008872												X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Raw Earth Environmental P/L
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NSW 2481

Project Name: DSI-EILEEN O'CONNOR
Project ID: s00360

Order No.:
Report #: 1114214
Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
Due: Jul 10, 2024
Priority: 5 Day
Contact Name: Jacques Chiomey

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Asbestos - WA guidelines	E.coli (MPN)	HOLD	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X					
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X	X			X	X	X	X	X
13	TB1	Jul 01, 2024		Trip Blank (liquid)	S24-Jl0008873											X	
14	S7-1.8	Jul 01, 2024		Soil	S24-Jl0008874								X	X			
15	SW1	Jul 01, 2024		Water	S24-Jl0008875		X		X	X	X	X			X		
16	WQA1	Jul 01, 2024		Water	S24-Jl0008876		X		X	X	X	X			X		
17	S17-A	Jul 01, 2024		Soil	S24-Jl0008877	X											
18	S19A	Jul 01, 2024		Soil	S24-Jl0008878	X											
19	S20A	Jul 01, 2024		Soil	S24-Jl0008879	X											
20	SW2	Jul 01, 2024		Water	S24-Jl0008880		X		X	X	X	X			X		
21	S10	Jul 01, 2024		Soil	S24-Jl0008881								X	X			
22	S13	Jul 01, 2024		Soil	S24-Jl0008882								X	X			
23	S15	Jul 01, 2024		Soil	S24-Jl0008883								X	X			
24	S16	Jul 01, 2024		Soil	S24-Jl0008884								X	X			
25	S22	Jul 01, 2024		Soil	S24-Jl0008885								X	X			
26	S23	Jul 01, 2024		Soil	S24-Jl0008886								X	X			
27	S24	Jul 01, 2024		Soil	S24-Jl0008887								X	X			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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Company Name: Raw Earth Environmental P/L
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Byron Bay
NSW 2481

Project Name: DSI-EILEEN O'CONNOR
Project ID: s00360

Order No.:
Report #: 1114214
Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
Due: Jul 10, 2024
Priority: 5 Day
Contact Name: Jacques Chiomey

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Asbestos - WA guidelines	E.coli (MPN)	HOLD	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X					
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X	X			X	X	X	X	X
28	QA2	Jul 01, 2024		Soil	S24-Jl0008888								X		X		
29	TS2	Jul 01, 2024		Trip Spike (liquid)	S24-Jl0008889												X
30	TB2	Jul 01, 2024		Trip Blank (liquid)	S24-Jl0008890											X	
31	TSW	Jul 01, 2024		Trip Spike (liquid)	S24-Jl0008891												X
32	TBW	Jul 01, 2024		Trip Blank (liquid)	S24-Jl0008892											X	
33	RINSE-S	Jul 01, 2024		Water	S24-Jl0008893										X		
34	RINSE-W	Jul 01, 2024		Water	S24-Jl0008894		X		X	X	X	X			X		
35	S1-1.8	Jul 01, 2024		Soil	S24-Jl0008895			X									
36	S2	Jul 01, 2024		Soil	S24-Jl0008896			X									
37	S4	Jul 01, 2024		Soil	S24-Jl0008897			X									
38	S7	Jul 01, 2024		Soil	S24-Jl0008898			X									
39	S9	Jul 01, 2024		Soil	S24-Jl0008899			X									
40	S5	Jul 01, 2024		Soil	S24-Jl0008900			X									

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
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Received: Jul 3, 2024 3:36 PM
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Priority: 5 Day
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Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Asbestos - WA guidelines	E.coli (MPN)	HOLD	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X					
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X	X			X	X	X	X	X
41	S12	Jul 01, 2024		Soil	S24-Jl0008901			X									
42	S14	Jul 01, 2024		Soil	S24-Jl0008902			X									
43	S18	Jul 01, 2024		Soil	S24-Jl0008903			X									
Test Counts						3	4	9	4	4	4	4	20	18	7	3	3

Raw Earth Environmental Pty Ltd
3/17 Tasman Way
Byron Bay
NSW 2481

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Jacques Chiomey**

Report **1114214-S**
Project name DSI-EILEEN O'CONNOR
Project ID s00360
Received Date Jul 03, 2024

Client Sample ID			**S1-0.5**	**S3**	**S6**	**S8**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S24-Jl0008861**	**S24-Jl0008862**	**S24-Jl0008863**	**S24-Jl0008864**
Date Sampled			**Jul 01, 2024**	**Jul 01, 2024**	**Jul 01, 2024**	**Jul 01, 2024**
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	74	111	108	120
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10*	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16*	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34*	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			S1-0.5	S3	S6	S8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-JI0008861	S24-JI0008862	S24-JI0008863	S24-JI0008864
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	71	65	93	80
p-Terphenyl-d14 (surr.)	1	%	54	70	85	89
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	< 10	< 10	< 10	< 10
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	5.5	5.8	7.2	5.9
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	< 5	< 5	< 5
Sample Properties						
% Moisture	1	%	8.1	14	11	9.9
Foreign Materials - ENM						
Initial Weight*	0.01	kg	9.3	11	11	12
Foreign Material - Type I						
Metal*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Glass*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Asphalt*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Stone*	0.1	%	0.1	< 0.1	< 0.1	< 0.1
Ceramic and slag (other than blast furnace slag)*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Foreign Material - Type II						
Plaster*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Clay lumps and other friable material*	0.1	%	100	100	100	100
Foreign Material - Type III						
Rubber*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Plastic*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Bitumen*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Paper*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Cloth*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Paint*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Wood*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Vegetable matter*	0.05	%	< 0.05	0.27	< 0.05	< 0.05

Client Sample ID			S11	S17	S17-1.8	S19
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-JI0008865	S24-JI0008866	S24-JI0008867	S24-JI0008868
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	96	116	97	94
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10*	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16*	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34*	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	72	67	80	112
p-Terphenyl-d14 (surr.)	1	%	73	67	88	92
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	12	< 10	12	< 10
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	6.2	8.3	7.4	8.0

Client Sample ID			S11	S17	S17-1.8	S19
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-JI0008865	S24-JI0008866	S24-JI0008867	S24-JI0008868
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	7.6	7.8	4.6	7.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	25	32	26	43
Copper	5	mg/kg	< 5	11	8.7	17
Lead	5	mg/kg	9.9	8.1	8.4	11
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	22	19	32
Zinc	5	mg/kg	< 5	19	18	27
Sample Properties						
% Moisture	1	%	13	13	17	12
Foreign Materials - ENM						
Initial Weight*	0.01	kg	12	10	9.6	12
Foreign Material - Type I						
Metal*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Glass*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Asphalt*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Stone*	0.1	%	2.3	84	0.5	25
Ceramic and slag (other than blast furnace slag)*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Foreign Material - Type II						
Plaster*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Clay lumps and other friable material*	0.1	%	98	16	99	75
Foreign Material - Type III						
Rubber*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Plastic*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Bitumen*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Paper*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Cloth*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Paint*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Wood*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Vegetable matter*	0.05	%	0.08	< 0.05	0.05	< 0.05

Client Sample ID			S20	S21	QA1	S7-1.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-JI0008869	S24-JI0008870	S24-JI0008871	S24-JI0008874
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	105	109	107	75
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			S20	S21	QA1	S7-1.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Jl0008869	S24-Jl0008870	S24-Jl0008871	S24-Jl0008874
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10*	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16*	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34*	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	113	64	77	67
p-Terphenyl-d14 (surr.)	1	%	102	68	86	64
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	< 10	< 10	-	10
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	7.6	5.1	-	6.3
Heavy Metals						
Arsenic	2	mg/kg	7.4	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	38	< 5	< 5	5.9
Copper	5	mg/kg	15	< 5	< 5	< 5
Lead	5	mg/kg	8.9	< 5	< 5	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	29	< 5	< 5	< 5
Zinc	5	mg/kg	35	< 5	< 5	< 5
Sample Properties						
% Moisture	1	%	17	9.4	12	11

Client Sample ID			S20	S21	QA1	S7-1.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-JI0008869	S24-JI0008870	S24-JI0008871	S24-JI0008874
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
Foreign Materials - ENM						
Initial Weight*	0.01	kg	11	11	-	10
Foreign Material - Type I						
Metal*	0.1	%	< 0.1	< 0.1	-	< 0.1
Glass*	0.1	%	< 0.1	< 0.1	-	< 0.1
Asphalt*	0.1	%	< 0.1	< 0.1	-	< 0.1
Stone*	0.1	%	50	< 0.1	-	48
Ceramic and slag (other than blast furnace slag)*	0.1	%	< 0.1	< 0.1	-	< 0.1
Foreign Material - Type II						
Plaster*	0.1	%	< 0.1	< 0.1	-	< 0.1
Clay lumps and other friable material*	0.1	%	50	100	-	52
Foreign Material - Type III						
Rubber*	0.05	%	< 0.05	< 0.05	-	< 0.05
Plastic*	0.05	%	< 0.05	< 0.05	-	< 0.05
Bitumen*	0.05	%	< 0.05	< 0.05	-	< 0.05
Paper*	0.05	%	< 0.05	< 0.05	-	< 0.05
Cloth*	0.05	%	< 0.05	< 0.05	-	< 0.05
Paint*	0.05	%	< 0.05	< 0.05	-	< 0.05
Wood*	0.05	%	< 0.05	< 0.05	-	< 0.05
Vegetable matter*	0.05	%	< 0.05	< 0.05	-	< 0.05

Client Sample ID			S10	S13	S15	S16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-JI0008881	S24-JI0008882	S24-JI0008883	S24-JI0008884
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	58	67	71	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10*	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16*	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34*	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			S10	S13	S15	S16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-JI0008881	S24-JI0008882	S24-JI0008883	S24-JI0008884
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	64	69	72	70
p-Terphenyl-d14 (surr.)	1	%	64	57	71	58
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	17	13	86	< 10
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	5.2	6.2	5.5	6.3
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	2.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	7.3	< 5	9.1
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	5.5	< 5	5.2
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	8.3	< 5	8.1
Sample Properties						
% Moisture	1	%	13	14	11	10
Foreign Materials - ENM						
Initial Weight*	0.01	kg	6.9	6.7	10	7.4
Foreign Material - Type I						
Metal*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Glass*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Asphalt*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Stone*	0.1	%	< 0.1	0.3	< 0.1	0.2
Ceramic and slag (other than blast furnace slag)*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Foreign Material - Type II						
Plaster*	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Clay lumps and other friable material*	0.1	%	100	99	100	100

Client Sample ID			S10	S13	S15	S16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-JI0008881	S24-JI0008882	S24-JI0008883	S24-JI0008884
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
Foreign Material - Type III						
Rubber*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Plastic*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Bitumen*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Paper*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Cloth*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Paint*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Wood*	0.05	%	< 0.05	< 0.05	< 0.05	< 0.05
Vegetable matter*	0.05	%	0.42	0.35	< 0.05	0.08

Client Sample ID			S22	S23	S24	QA2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-JI0008885	S24-JI0008886	S24-JI0008887	S24-JI0008888
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	62	98	64	68
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	21	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10*	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16*	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34*	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			S22	S23	S24	QA2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-JI0008885	S24-JI0008886	S24-JI0008887	S24-JI0008888
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	71	103	67	66
p-Terphenyl-d14 (surr.)	1	%	68	90	56	56
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	< 10	51	< 10	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	6.0	7.3	6.5	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	2.8	6.4	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	5.3	60	18	< 5
Copper	5	mg/kg	< 5	32	< 5	< 5
Lead	5	mg/kg	< 5	5.7	9.6	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	66	< 5	< 5
Zinc	5	mg/kg	< 5	65	52	< 5
Sample Properties						
% Moisture	1	%	21	17	15	13
Foreign Materials - ENM						
Initial Weight*	0.01	kg	8.9	8.2	9.1	-
Foreign Material - Type I						
Metal*	0.1	%	< 0.1	< 0.1	< 0.1	-
Glass*	0.1	%	< 0.1	< 0.1	< 0.1	-
Asphalt*	0.1	%	< 0.1	< 0.1	< 0.1	-
Stone*	0.1	%	< 0.1	53	11	-
Ceramic and slag (other than blast furnace slag)*	0.1	%	< 0.1	< 0.1	< 0.1	-
Foreign Material - Type II						
Plaster*	0.1	%	< 0.1	< 0.1	< 0.1	-
Clay lumps and other friable material*	0.1	%	100	46	89	-
Foreign Material - Type III						
Rubber*	0.05	%	< 0.05	< 0.05	< 0.05	-
Plastic*	0.05	%	< 0.05	< 0.05	< 0.05	-
Bitumen*	0.05	%	< 0.05	< 0.05	< 0.05	-
Paper*	0.05	%	< 0.05	< 0.05	< 0.05	-
Cloth*	0.05	%	< 0.05	< 0.05	< 0.05	-
Paint*	0.05	%	< 0.05	< 0.05	< 0.05	-
Wood*	0.05	%	< 0.05	< 0.05	< 0.05	-
Vegetable matter*	0.05	%	< 0.05	0.65	< 0.05	-

Sample History

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

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
BTEX	Sydney	Jul 06, 2024	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons	Sydney	Jul 06, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 06, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 06, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 06, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 06, 2024	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Jul 06, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
ENM Exemption Suite - The excavated natural material order 2014 NSW EPA			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	Sydney	Jul 06, 2024	7 Days
- Method: LTM-INO-4030 Conductivity			
pH (1:5 Aqueous extract at 25 °C as rec.)	Sydney	Jul 06, 2024	7 Days
- Method: LTM-GEN-7090 pH by ISE			
Foreign Material - Type I	Sydney	Jul 11, 2024	180 Days
- Method: RMS Method T276			
Foreign Material - Type II	Sydney	Jul 11, 2024	180 Days
- Method: RMS Method T276			
Foreign Material - Type III	Sydney	Jul 11, 2024	180 Days
- Method: RMS Method T276			
% Moisture	Sydney	Jul 03, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Raw Earth Environmental P/L
Address: 3/17 Tasman Way
Byron Bay
NSW 2481

Project Name: DSI-EILEEN O'CONNOR
Project ID: s00360

Order No.:
Report #: 1114214
Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
Due: Jul 10, 2024
Priority: 5 Day
Contact Name: Jacques Chiomey

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail	Asbestos - WA guidelines	E.coli (MPN)	HOLD	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254							X					
Sydney Laboratory - NATA # 1261 Site # 1254	X		X	X	X			X	X	X	X	X
External Laboratory		X				X						

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	S1-0.5	Jul 01, 2024		Soil	S24-Jl0008861								X	X			
2	S3	Jul 01, 2024		Soil	S24-Jl0008862								X	X			
3	S6	Jul 01, 2024		Soil	S24-Jl0008863								X	X			
4	S8	Jul 01, 2024		Soil	S24-Jl0008864								X	X			
5	S11	Jul 01, 2024		Soil	S24-Jl0008865								X	X			
6	S17	Jul 01, 2024		Soil	S24-Jl0008866								X	X			
7	S17-1.8	Jul 01, 2024		Soil	S24-Jl0008867								X	X			
8	S19	Jul 01, 2024		Soil	S24-Jl0008868								X	X			
9	S20	Jul 01, 2024		Soil	S24-Jl0008869								X	X			
10	S21	Jul 01, 2024		Soil	S24-Jl0008870								X	X			
11	QA1	Jul 01, 2024		Soil	S24-Jl0008871								X		X		
12	TS1	Jul 01, 2024		Trip Spike (liquid)	S24-Jl0008872												X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Raw Earth Environmental P/L
Address: 3/17 Tasman Way
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NSW 2481

Project Name: DSI-EILEEN O'CONNOR
Project ID: s00360

Order No.:
Report #: 1114214
Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
Due: Jul 10, 2024
Priority: 5 Day
Contact Name: Jacques Chiomey

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Asbestos - WA guidelines	E.coli (MPN)	HOLD	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X					
Sydney Laboratory - NATA # 1261 Site # 1217						X		X	X	X			X	X	X	X	X
13	TB1	Jul 01, 2024		Trip Blank (liquid)	S24-Jl0008873											X	
14	S7-1.8	Jul 01, 2024		Soil	S24-Jl0008874								X	X			
15	SW1	Jul 01, 2024		Water	S24-Jl0008875		X		X	X	X	X			X		
16	WQA1	Jul 01, 2024		Water	S24-Jl0008876		X		X	X	X	X			X		
17	S17-A	Jul 01, 2024		Soil	S24-Jl0008877	X											
18	S19A	Jul 01, 2024		Soil	S24-Jl0008878	X											
19	S20A	Jul 01, 2024		Soil	S24-Jl0008879	X											
20	SW2	Jul 01, 2024		Water	S24-Jl0008880		X		X	X	X	X			X		
21	S10	Jul 01, 2024		Soil	S24-Jl0008881								X	X			
22	S13	Jul 01, 2024		Soil	S24-Jl0008882								X	X			
23	S15	Jul 01, 2024		Soil	S24-Jl0008883								X	X			
24	S16	Jul 01, 2024		Soil	S24-Jl0008884								X	X			
25	S22	Jul 01, 2024		Soil	S24-Jl0008885								X	X			
26	S23	Jul 01, 2024		Soil	S24-Jl0008886								X	X			
27	S24	Jul 01, 2024		Soil	S24-Jl0008887								X	X			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

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Address: 3/17 Tasman Way
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NSW 2481

Project Name: DSI-EILEEN O'CONNOR
Project ID: s00360

Order No.:
Report #: 1114214
Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
Due: Jul 10, 2024
Priority: 5 Day
Contact Name: Jacques Chiomey

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Asbestos - WA guidelines	E.coli (MPN)	HOLD	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X					
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X	X			X	X	X	X	X
28	QA2	Jul 01, 2024		Soil	S24-Jl0008888								X		X		
29	TS2	Jul 01, 2024		Trip Spike (liquid)	S24-Jl0008889												X
30	TB2	Jul 01, 2024		Trip Blank (liquid)	S24-Jl0008890											X	
31	TSW	Jul 01, 2024		Trip Spike (liquid)	S24-Jl0008891												X
32	TBW	Jul 01, 2024		Trip Blank (liquid)	S24-Jl0008892											X	
33	RINSE-S	Jul 01, 2024		Water	S24-Jl0008893										X		
34	RINSE-W	Jul 01, 2024		Water	S24-Jl0008894		X		X	X	X	X			X		
35	S1-1.8	Jul 01, 2024		Soil	S24-Jl0008895			X									
36	S2	Jul 01, 2024		Soil	S24-Jl0008896			X									
37	S4	Jul 01, 2024		Soil	S24-Jl0008897			X									
38	S7	Jul 01, 2024		Soil	S24-Jl0008898			X									
39	S9	Jul 01, 2024		Soil	S24-Jl0008899			X									
40	S5	Jul 01, 2024		Soil	S24-Jl0008900			X									

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Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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NSW 2481

Project Name: DSI-EILEEN O'CONNOR
Project ID: s00360

Order No.:
Report #: 1114214
Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
Due: Jul 10, 2024
Priority: 5 Day
Contact Name: Jacques Chiomey

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Asbestos - WA guidelines	E.coli (MPN)	HOLD	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X					
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X	X			X	X	X	X	X
41	S12	Jul 01, 2024		Soil	S24-Jl0008901			X									
42	S14	Jul 01, 2024		Soil	S24-Jl0008902			X									
43	S18	Jul 01, 2024		Soil	S24-Jl0008903			X									
Test Counts						3	4	9	4	4	4	4	20	18	7	3	3

Internal Quality Control Review and Glossary

General

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

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

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

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

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

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

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%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as 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 are not data from your samples.
3. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

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	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	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							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
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							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	uS/cm	< 10			10	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pyrene	mg/kg	< 0.5			0.5	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	86			70-130	Pass	
Toluene	%	91			70-130	Pass	
Ethylbenzene	%	81			70-130	Pass	
m&p-Xylenes	%	86			70-130	Pass	
o-Xylene	%	93			70-130	Pass	
Xylenes - Total*	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	88			70-130	Pass	
TRH C10-C14	%	82			70-130	Pass	
TRH C6-C10*	%	87			70-130	Pass	
TRH >C10-C16*	%	90			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	98			80-120	Pass	
Cadmium	%	105			80-120	Pass	
Chromium	%	107			80-120	Pass	
Copper	%	110			80-120	Pass	
Lead	%	108			80-120	Pass	
Mercury	%	114			80-120	Pass	
Nickel	%	108			80-120	Pass	
Zinc	%	107			80-120	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	%	96			70-130	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	%	95			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	85			70-130	Pass	
Acenaphthylene	%	85			70-130	Pass	
Anthracene	%	89			70-130	Pass	
Benz(a)anthracene	%	77			70-130	Pass	
Benzo(a)pyrene	%	80			70-130	Pass	
Benzo(b&j)fluoranthene	%	83			70-130	Pass	
Benzo(g.h.i)perylene	%	81			70-130	Pass	
Benzo(k)fluoranthene	%	80			70-130	Pass	
Chrysene	%	79			70-130	Pass	
Dibenz(a.h)anthracene	%	78			70-130	Pass	
Fluoranthene	%	86			70-130	Pass	
Fluorene	%	84			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	79			70-130	Pass	
Naphthalene	%	83			70-130	Pass	
Phenanthrene	%	84			70-130	Pass	
Pyrene	%	89			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S24-Jl0016961	NCP	%	73			70-130	Pass	
TRH >C10-C16*	S24-Jl0016961	NCP	%	71			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S24-Jl0008865	CP	%	85			75-125	Pass	
Cadmium	S24-Jl0008865	CP	%	109			75-125	Pass	
Chromium	S24-Jl0008865	CP	%	96			75-125	Pass	
Copper	S24-Jl0008865	CP	%	92			75-125	Pass	
Lead	S24-Jl0008865	CP	%	89			75-125	Pass	
Mercury	S24-Jl0008865	CP	%	115			75-125	Pass	
Nickel	S24-Jl0008865	CP	%	90			75-125	Pass	
Zinc	S24-Jl0008865	CP	%	90			75-125	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S24-Jl0008868	CP	%	103			70-130	Pass	
Toluene	S24-Jl0008868	CP	%	85			70-130	Pass	
Ethylbenzene	S24-Jl0008868	CP	%	81			70-130	Pass	
m&p-Xylenes	S24-Jl0008868	CP	%	83			70-130	Pass	
o-Xylene	S24-Jl0008868	CP	%	84			70-130	Pass	
Xylenes - Total*	S24-Jl0008868	CP	%	83			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S24-Jl0008868	CP	%	75			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S24-Jl0008868	CP	%	80			70-130	Pass	
TRH C6-C10*	S24-Jl0008868	CP	%	79			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S24-Jl0008874	CP	%	81			70-130	Pass	
Acenaphthylene	S24-Jl0008874	CP	%	85			70-130	Pass	
Anthracene	S24-Jl0008874	CP	%	77			70-130	Pass	
Benz(a)anthracene	S24-Jl0008874	CP	%	74			70-130	Pass	
Benzo(a)pyrene	S24-Jl0008874	CP	%	75			70-130	Pass	
Benzo(b&j)fluoranthene	S24-Jl0008874	CP	%	72			70-130	Pass	
Benzo(g.h.i)perylene	S24-Jl0008874	CP	%	74			70-130	Pass	
Benzo(k)fluoranthene	S24-Jl0008874	CP	%	77			70-130	Pass	
Chrysene	S24-Jl0008874	CP	%	78			70-130	Pass	
Dibenz(a.h)anthracene	S24-Jl0008874	CP	%	70			70-130	Pass	
Fluoranthene	S24-Jl0008874	CP	%	78			70-130	Pass	
Fluorene	S24-Jl0008874	CP	%	78			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S24-Jl0008874	CP	%	72			70-130	Pass	
Naphthalene	S24-Jl0008874	CP	%	83			70-130	Pass	
Phenanthrene	S24-Jl0008874	CP	%	79			70-130	Pass	
Pyrene	S24-Jl0008874	CP	%	78			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S24-Jl0008861	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S24-Jl0008861	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S24-Jl0008861	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S24-Jl0008861	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
BTEX				Result 1	Result 2	RPD			
o-Xylene	S24-Jl0008861	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S24-Jl0008861	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S24-Jl0008861	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S24-Jl0008861	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10*	S24-Jl0008861	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S24-Jl0008864	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S24-Jl0008864	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S24-Jl0008864	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S24-Jl0008864	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S24-Jl0008864	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S24-Jl0008864	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S24-Jl0008864	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S24-Jl0008864	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S24-Jl0008864	CP	%	9.9	9.9	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S24-Jl0008869	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S24-Jl0008869	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S24-Jl0008869	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S24-Jl0008869	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S24-Jl0008869	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S24-Jl0008869	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S24-Jl0008869	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S24-Jl0008871	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S24-Jl0008871	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S24-Jl0008871	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C10-C16*	S24-Jl0008871	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34*	S24-Jl0008871	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S24-Jl0008871	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Dibenz(a.h)anthracene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S24-Jl0008871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S24-Jl0008874	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S24-Jl0008874	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S24-Jl0008874	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S24-Jl0008874	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S24-Jl0008874	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S24-Jl0008874	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S24-Jl0008874	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S24-Jl0008874	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10*	S24-Jl0008874	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	S24-Jl0008883	CP	uS/cm	86	86	<1	30%	Pass	
pH (1:5 Aqueous extract at 25 °C as rec.)	S24-Jl0008883	CP	pH Units	5.5	5.4	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S24-Jl0008883	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S24-Jl0008883	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S24-Jl0008883	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S24-Jl0008883	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S24-Jl0008883	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S24-Jl0008883	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S24-Jl0008883	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S24-Jl0008883	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S24-Jl0008883	CP	%	11	10	3.4	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	S24-Jl0008886	CP	uS/cm	51	76	39	30%	Fail	Q15

Comments

Analysis of E.Coli and Thermotolerant coliforms has been completed by Eurofins Food Testing Australia Pty Ltd, NATA Accreditation Number 20293, report reference AR-24-NV-012345-01.

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
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Nileshni Goundar	Analytical Services Manager
Maria Tian	Senior Analyst-Organic
Mickael Ros	Senior Analyst-Metal
Raymond Siu	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Sample Properties
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic
Ryan Phillips	Senior Analyst-Sample Properties
Sayeed Abu	Senior Analyst-Asbestos

Glenn Jackson
Managing Director

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.

Raw Earth Environmental Pty Ltd
3/17 Tasman Way
Byron Bay
NSW 2481

Attention: **Jacques Chiomey**

Report **1114214-W**
Project name DSI-EILEEN O'CONNOR
Project ID s00360
Received Date Jul 03, 2024

Client Sample ID			**TS1**	**TB1**	**SW1**	**WQA1**
Sample Matrix			**Trip Spike (liquid)**	**Trip Blank (liquid)**	**Water**	**Water**
Eurofins Sample No.			**S24-Jl0008872**	**S24-Jl0008873**	**S24-Jl0008875**	**S24-Jl0008876**
Date Sampled			**Jul 01, 2024**	**Jul 01, 2024**	**Jul 01, 2024**	**Jul 01, 2024**
Test/Reference	LOR	Unit				
TRH C6-C10	1	%	79	-	-	-
Nitrate & Nitrite (as N)	0.05	mg/L	-	-	2.2	2.0
Nitrate (as N)	0.02	mg/L	-	-	2.2	2.0
Nitrite (as N)	0.02	mg/L	-	-	< 0.02	< 0.02
pH (at 25 °C)	0.1	pH Units	-	-	6.8	6.5
Phosphate total (as P)	0.01	mg/L	-	-	0.06	0.15
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	-	-	1.5	0.9
Total Nitrogen (as N)*	0.2	mg/L	-	-	3.7	2.9
Total Recoverable Hydrocarbons						
Naphthalene	1	%	70	-	-	-
TRH C6-C9	1	%	84	-	-	-
BTEX						
Benzene	1	%	77	-	-	-
Ethylbenzene	1	%	73	-	-	-
m&p-Xylenes	1	%	73	-	-	-
o-Xylene	1	%	73	-	-	-
Toluene	1	%	72	-	-	-
Xylenes - Total	1	%	73	-	-	-
4-Bromofluorobenzene (surr.)	1	%	77	-	-	-
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	-	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	-	-	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	-	-	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	-	-	< 0.1	0.2
TRH C10-C36 (Total)	0.1	mg/L	-	-	< 0.1	0.2
TRH C6-C10*	0.02	mg/L	-	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	< 0.02	< 0.02	< 0.02
TRH >C10-C16*	0.05	mg/L	-	-	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)*[N01]	0.05	mg/L	-	-	< 0.05	< 0.05
TRH >C16-C34*	0.1	mg/L	-	-	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	-	-	< 0.1	0.2
TRH >C10-C40 (total)*	0.1	mg/L	-	-	< 0.1	0.2

Client Sample ID			TS1	TB1	SW1	WQA1
Sample Matrix			Trip Spike (liquid)	Trip Blank (liquid)	Water	Water
Eurofins Sample No.			S24-JI0008872	S24-JI0008873	S24-JI0008875	S24-JI0008876
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	-	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	-	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	82	76	80
BTEX and Naphthalene						
Naphthalene[N02]	0.01	mg/L	-	< 0.01	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	-	-	< 0.01	< 0.01
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	-	-	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	-	-	< 0.001	< 0.001
Anthracene	0.001	mg/L	-	-	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	-	-	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	-	-	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	-	-	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	-	-	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	-	-	< 0.001	< 0.001
Chrysene	0.001	mg/L	-	-	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	-	-	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	-	-	< 0.001	< 0.001
Fluorene	0.001	mg/L	-	-	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	-	-	< 0.001	< 0.001
Naphthalene	0.001	mg/L	-	-	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	-	-	< 0.001	< 0.001
Pyrene	0.001	mg/L	-	-	< 0.001	< 0.001
Total PAH*	0.001	mg/L	-	-	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	-	56	53
p-Terphenyl-d14 (surr.)	1	%	-	-	92	93
Heavy Metals						
Arsenic	0.001	mg/L	-	-	< 0.001	< 0.001
Cadmium	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Chromium	0.001	mg/L	-	-	< 0.001	< 0.001
Copper	0.001	mg/L	-	-	0.005	0.004
Lead	0.001	mg/L	-	-	< 0.001	< 0.001
Mercury	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Nickel	0.001	mg/L	-	-	0.003	0.003
Zinc	0.005	mg/L	-	-	0.060	0.060
Pathogens						
E.coli (MPN)*	1	MPN/100mL	-	-	SEE ATTACHED	SEE ATTACHED
Thermotolerant Coliforms (MPN)	1	MPN/100mL	-	-	SEE ATTACHED	SEE ATTACHED

Client Sample ID			SW2	TS2	TB2	TSW
Sample Matrix			Water	Trip Spike (liquid)	Trip Blank (liquid)	Trip Spike (liquid)
Eurofins Sample No.			S24-JI0008880	S24-JI0008889	S24-JI0008890	S24-JI0008891
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
TRH C6-C10	1	%	-	91	-	93
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	-	-	-
Nitrate (as N)	0.02	mg/L	0.03	-	-	-
Nitrite (as N)	0.02	mg/L	< 0.02	-	-	-
pH (at 25 °C)	0.1	pH Units	6.2	-	-	-
Phosphate total (as P)	0.01	mg/L	0.38	-	-	-
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	3.1	-	-	-
Total Nitrogen (as N)*	0.2	mg/L	3.1	-	-	-
Total Recoverable Hydrocarbons						
Naphthalene	1	%	-	92	-	90
TRH C6-C9	1	%	-	96	-	98
BTEX						
Benzene	1	%	-	98	-	100
Ethylbenzene	1	%	-	88	-	91
m&p-Xylenes	1	%	-	93	-	93
o-Xylene	1	%	-	93	-	93
Toluene	1	%	-	80	-	90
Xylenes - Total	1	%	-	93	-	93
4-Bromofluorobenzene (surr.)	1	%	-	77	-	75
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	-	< 0.02	-
TRH C10-C14	0.05	mg/L	0.14	-	-	-
TRH C15-C28	0.1	mg/L	< 0.1	-	-	-
TRH C29-C36	0.1	mg/L	< 0.1	-	-	-
TRH C10-C36 (Total)	0.1	mg/L	0.14	-	-	-
TRH C6-C10*	0.02	mg/L	< 0.02	-	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	< 0.02	-
TRH >C10-C16*	0.05	mg/L	0.15	-	-	-
TRH >C10-C16 less Naphthalene (F2)*[N01]	0.05	mg/L	0.15	-	-	-
TRH >C16-C34*	0.1	mg/L	< 0.1	-	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	-	-
TRH >C10-C40 (total)*	0.1	mg/L	0.15	-	-	-
BTEX						
Benzene	0.001	mg/L	< 0.001	-	< 0.001	-
Toluene	0.001	mg/L	< 0.001	-	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	-	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	-	< 0.002	-
o-Xylene	0.001	mg/L	< 0.001	-	< 0.001	-
Xylenes - Total*	0.003	mg/L	< 0.003	-	< 0.003	-
4-Bromofluorobenzene (surr.)	1	%	73	-	80	-
BTEX and Naphthalene						
Naphthalene[N02]	0.01	mg/L	-	-	< 0.01	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	-	-	-

Client Sample ID			SW2	TS2	TB2	TSW
Sample Matrix			Water	Trip Spike (liquid)	Trip Blank (liquid)	Trip Spike (liquid)
Eurofins Sample No.			S24-JI0008880	S24-JI0008889	S24-JI0008890	S24-JI0008891
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	-	-	-
Acenaphthylene	0.001	mg/L	< 0.001	-	-	-
Anthracene	0.001	mg/L	< 0.001	-	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	-	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	-	-	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	-	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	-	-
Chrysene	0.001	mg/L	< 0.001	-	-	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	-	-	-
Fluoranthene	0.001	mg/L	< 0.001	-	-	-
Fluorene	0.001	mg/L	< 0.001	-	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	-	-
Naphthalene	0.001	mg/L	< 0.001	-	-	-
Phenanthrene	0.001	mg/L	< 0.001	-	-	-
Pyrene	0.001	mg/L	< 0.001	-	-	-
Total PAH*	0.001	mg/L	< 0.001	-	-	-
2-Fluorobiphenyl (surr.)	1	%	61	-	-	-
p-Terphenyl-d14 (surr.)	1	%	INT	-	-	-
Heavy Metals						
Arsenic	0.001	mg/L	< 0.001	-	-	-
Cadmium	0.0002	mg/L	< 0.0002	-	-	-
Chromium	0.001	mg/L	0.002	-	-	-
Copper	0.001	mg/L	0.003	-	-	-
Lead	0.001	mg/L	0.002	-	-	-
Mercury	0.0001	mg/L	< 0.0001	-	-	-
Nickel	0.001	mg/L	0.001	-	-	-
Zinc	0.005	mg/L	0.030	-	-	-
Pathogens						
E.coli (MPN)*	1	MPN/100mL	SEE ATTACHED	-	-	-
Thermotolerant Coliforms (MPN)	1	MPN/100mL	SEE ATTACHED	-	-	-

Client Sample ID			TBW	RINSE-S	RINSE-W
Sample Matrix			Trip Blank (liquid)	Water	Water
Eurofins Sample No.			S24-JI0008892	S24-JI0008893	S24-JI0008894
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit			
Nitrate & Nitrite (as N)	0.05	mg/L	-	-	< 0.05
Nitrate (as N)	0.02	mg/L	-	-	< 0.02
Nitrite (as N)	0.02	mg/L	-	-	< 0.02
pH (at 25 °C)	0.1	pH Units	-	-	7.6
Phosphate total (as P)	0.01	mg/L	-	-	0.04
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	-	-	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	-	-	< 0.2

Client Sample ID			TBW	RINSE-S	RINSE-W
Sample Matrix			Trip Blank (liquid)	Water	Water
Eurofins Sample No.			S24-Jl0008892	S24-Jl0008893	S24-Jl0008894
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons					
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	-	< 0.05	0.07
TRH C15-C28	0.1	mg/L	-	< 0.1	0.1
TRH C29-C36	0.1	mg/L	-	0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	-	0.1	0.17
TRH C6-C10*	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH >C10-C16*	0.05	mg/L	-	< 0.05	0.07
TRH >C10-C16 less Naphthalene (F2)*[N01]	0.05	mg/L	-	< 0.05	0.07
TRH >C16-C34*	0.1	mg/L	-	< 0.1	0.1
TRH >C34-C40	0.1	mg/L	-	0.2	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	-	0.2	0.17
BTEX					
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	76	82	76
BTEX and Naphthalene					
Naphthalene[N02]	0.01	mg/L	< 0.01	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.01	mg/L	-	< 0.01	< 0.01
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	-	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	-	< 0.001	< 0.001
Anthracene	0.001	mg/L	-	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	-	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	-	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	-	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	-	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	-	< 0.001	< 0.001
Chrysene	0.001	mg/L	-	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	-	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	-	< 0.001	< 0.001
Fluorene	0.001	mg/L	-	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	-	< 0.001	< 0.001
Naphthalene	0.001	mg/L	-	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	-	< 0.001	< 0.001
Pyrene	0.001	mg/L	-	< 0.001	< 0.001
Total PAH*	0.001	mg/L	-	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	50	50
p-Terphenyl-d14 (surr.)	1	%	-	93	89

Client Sample ID			TBW	RINSE-S	RINSE-W
Sample Matrix			Trip Blank (liquid)	Water	Water
Eurofins Sample No.			S24-JI0008892	S24-JI0008893	S24-JI0008894
Date Sampled			Jul 01, 2024	Jul 01, 2024	Jul 01, 2024
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	0.001	mg/L	-	< 0.001	< 0.001
Cadmium	0.0002	mg/L	-	< 0.0002	< 0.0002
Chromium	0.001	mg/L	-	< 0.001	< 0.001
Copper	0.001	mg/L	-	< 0.001	< 0.001
Lead	0.001	mg/L	-	< 0.001	< 0.001
Mercury	0.0001	mg/L	-	< 0.0001	< 0.0001
Nickel	0.001	mg/L	-	< 0.001	< 0.001
Zinc	0.005	mg/L	-	< 0.005	< 0.005
Pathogens					
E.coli (MPN)*	1	MPN/100mL	-	-	SEE ATTACHED
Thermotolerant Coliforms (MPN)	1	MPN/100mL	-	-	SEE ATTACHED

Sample History

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

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
Total Nitrogen Set (as N)			
Nitrate & Nitrite (as N)	Melbourne	Jul 08, 2024	28 Days
- Method: LTM-INO-4450 Determination of Nitrogen Species by Discrete Analyser			
Nitrate (as N)	Melbourne	Jul 08, 2024	28 Days
- Method: LTM-INO-4450 Determination of Nitrogen Species by Discrete Analyser			
Nitrite (as N)	Melbourne	Jul 08, 2024	2 Days
- Method: LTM-INO-4450 Nitrogens by Discrete Analyser			
Total Kjeldahl Nitrogen (as N)	Melbourne	Jul 08, 2024	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
pH (at 25 °C)	Sydney	Jul 10, 2024	6 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Phosphate total (as P)	Sydney	Jul 10, 2024	28 Days
- Method: E052 Total Phosphate (as P)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 10, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Jul 03, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 03, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jul 03, 2024	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 10, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 10, 2024	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Jul 10, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

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Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Raw Earth Environmental P/L
Address: 3/17 Tasman Way
Byron Bay
NSW 2481

Project Name: DSI-EILEEN O'CONNOR
Project ID: s00360

Order No.:
Report #: 1114214
Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
Due: Jul 10, 2024
Priority: 5 Day
Contact Name: Jacques Chiomey

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail	Asbestos - WA guidelines	E.coli (MPN)	HOLD	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254							X					
Sydney Laboratory - NATA # 1261 Site # 1254	X		X	X	X			X	X	X	X	X
External Laboratory		X				X						

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	S1-0.5	Jul 01, 2024		Soil	S24-Jl0008861								X	X		
2	S3	Jul 01, 2024		Soil	S24-Jl0008862								X	X		
3	S6	Jul 01, 2024		Soil	S24-Jl0008863								X	X		
4	S8	Jul 01, 2024		Soil	S24-Jl0008864								X	X		
5	S11	Jul 01, 2024		Soil	S24-Jl0008865								X	X		
6	S17	Jul 01, 2024		Soil	S24-Jl0008866								X	X		
7	S17-1.8	Jul 01, 2024		Soil	S24-Jl0008867								X	X		
8	S19	Jul 01, 2024		Soil	S24-Jl0008868								X	X		
9	S20	Jul 01, 2024		Soil	S24-Jl0008869								X	X		
10	S21	Jul 01, 2024		Soil	S24-Jl0008870								X	X		
11	QA1	Jul 01, 2024		Soil	S24-Jl0008871								X		X	
12	TS1	Jul 01, 2024		Trip Spike (liquid)	S24-Jl0008872											X

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NSW 2481

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Project ID: s00360

Order No.:
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Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
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Priority: 5 Day
Contact Name: Jacques Chiomey

Eurofins Analytical Services Manager : Adam Bateup

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Melbourne Laboratory - NATA # 1261 Site # 1254												X					
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X	X			X	X	X	X	X
13	TB1	Jul 01, 2024		Trip Blank (liquid)	S24-Jl0008873											X	
14	S7-1.8	Jul 01, 2024		Soil	S24-Jl0008874								X	X			
15	SW1	Jul 01, 2024		Water	S24-Jl0008875		X		X	X	X	X			X		
16	WQA1	Jul 01, 2024		Water	S24-Jl0008876		X		X	X	X	X			X		
17	S17-A	Jul 01, 2024		Soil	S24-Jl0008877	X											
18	S19A	Jul 01, 2024		Soil	S24-Jl0008878	X											
19	S20A	Jul 01, 2024		Soil	S24-Jl0008879	X											
20	SW2	Jul 01, 2024		Water	S24-Jl0008880		X		X	X	X	X			X		
21	S10	Jul 01, 2024		Soil	S24-Jl0008881								X	X			
22	S13	Jul 01, 2024		Soil	S24-Jl0008882								X	X			
23	S15	Jul 01, 2024		Soil	S24-Jl0008883								X	X			
24	S16	Jul 01, 2024		Soil	S24-Jl0008884								X	X			
25	S22	Jul 01, 2024		Soil	S24-Jl0008885								X	X			
26	S23	Jul 01, 2024		Soil	S24-Jl0008886								X	X			
27	S24	Jul 01, 2024		Soil	S24-Jl0008887								X	X			

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Project ID: s00360

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Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
Due: Jul 10, 2024
Priority: 5 Day
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Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Asbestos - WA guidelines	E.coli (MPN)	HOLD	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X					
Sydney Laboratory - NATA # 1261 Site # 1217						X		X	X	X			X	X	X	X	X
28	QA2	Jul 01, 2024		Soil	S24-Jl0008888								X		X		
29	TS2	Jul 01, 2024		Trip Spike (liquid)	S24-Jl0008889												X
30	TB2	Jul 01, 2024		Trip Blank (liquid)	S24-Jl0008890											X	
31	TSW	Jul 01, 2024		Trip Spike (liquid)	S24-Jl0008891												X
32	TBW	Jul 01, 2024		Trip Blank (liquid)	S24-Jl0008892											X	
33	RINSE-S	Jul 01, 2024		Water	S24-Jl0008893										X		
34	RINSE-W	Jul 01, 2024		Water	S24-Jl0008894		X		X	X	X	X			X		
35	S1-1.8	Jul 01, 2024		Soil	S24-Jl0008895			X									
36	S2	Jul 01, 2024		Soil	S24-Jl0008896			X									
37	S4	Jul 01, 2024		Soil	S24-Jl0008897			X									
38	S7	Jul 01, 2024		Soil	S24-Jl0008898			X									
39	S9	Jul 01, 2024		Soil	S24-Jl0008899			X									
40	S5	Jul 01, 2024		Soil	S24-Jl0008900			X									

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Melbourne Laboratory - NATA # 1261 Site # 1254												X					
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X	X			X	X	X	X	X
41	S12	Jul 01, 2024		Soil	S24-Jl0008901			X									
42	S14	Jul 01, 2024		Soil	S24-Jl0008902			X									
43	S18	Jul 01, 2024		Soil	S24-Jl0008903			X									
Test Counts						3	4	9	4	4	4	4	20	18	7	3	3

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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 follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

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

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

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

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

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%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as 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 are not data from your samples.
3. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH >C10-C16*	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34*	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH >C10-C16*	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34*	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C6-C10*	mg/L	< 0.02			0.02	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
BTEX and Naphthalene							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Nitrate & Nitrite (as N)	%	102			70-130	Pass	
Nitrite (as N)	%	95			70-130	Pass	
Phosphate total (as P)	%	112			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	97			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	101			70-130	Pass	
Acenaphthylene	%	106			70-130	Pass	
Anthracene	%	124			70-130	Pass	
Benz(a)anthracene	%	89			70-130	Pass	
Benzo(a)pyrene	%	96			70-130	Pass	
Benzo(b&j)fluoranthene	%	91			70-130	Pass	
Benzo(g.h.i)perylene	%	99			70-130	Pass	
Benzo(k)fluoranthene	%	97			70-130	Pass	
Chrysene	%	98			70-130	Pass	
Dibenz(a.h)anthracene	%	96			70-130	Pass	
Fluoranthene	%	113			70-130	Pass	
Fluorene	%	107			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	96			70-130	Pass	
Naphthalene	%	72			70-130	Pass	
Phenanthrene	%	106			70-130	Pass	
Pyrene	%	116			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C10-C14	%	113			70-130	Pass	
TRH >C10-C16*	%	114			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C10-C14	%	84			70-130	Pass	
TRH >C10-C16*	%	83			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	78			70-130	Pass	
TRH C6-C10*	%	80			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	103			70-130	Pass	
Toluene	%	88			70-130	Pass	
Ethylbenzene	%	100			70-130	Pass	
m&p-Xylenes	%	102			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene			%	99			70-130	Pass	
Xylenes - Total*			%	101			70-130	Pass	
LCS - % Recovery									
BTEX and Naphthalene									
Naphthalene			%	95			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	95			80-120	Pass	
Cadmium			%	94			80-120	Pass	
Chromium			%	93			80-120	Pass	
Copper			%	91			80-120	Pass	
Lead			%	87			80-120	Pass	
Mercury			%	93			80-120	Pass	
Nickel			%	92			80-120	Pass	
Zinc			%	93			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S24-Jn0076061	NCP	%	87			70-130	Pass	
TRH C6-C10*	S24-Jn0076061	NCP	%	88			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S24-Jn0076061	NCP	%	104			70-130	Pass	
Toluene	S24-Jn0076061	NCP	%	90			70-130	Pass	
Ethylbenzene	S24-Jn0076061	NCP	%	97			70-130	Pass	
m&p-Xylenes	S24-Jn0076061	NCP	%	101			70-130	Pass	
o-Xylene	S24-Jn0076061	NCP	%	98			70-130	Pass	
Xylenes - Total*	S24-Jn0076061	NCP	%	100			70-130	Pass	
Spike - % Recovery									
BTEX and Naphthalene				Result 1					
Naphthalene	S24-Jn0076061	NCP	%	90			70-130	Pass	
Spike - % Recovery									
				Result 1					
Nitrate & Nitrite (as N)	M24-Jl0014223	NCP	%	113			70-130	Pass	
Nitrite (as N)	M24-Jl0014223	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S24-Jl0009997	NCP	%	107			70-130	Pass	
TRH >C10-C16*	S24-Jl0009997	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S24-Jl0018562	NCP	%	99			75-125	Pass	
Cadmium	S24-Jl0018562	NCP	%	96			75-125	Pass	
Chromium	S24-Jl0018562	NCP	%	91			75-125	Pass	
Copper	S24-Jl0018562	NCP	%	87			75-125	Pass	
Lead	S24-Jl0018562	NCP	%	85			75-125	Pass	
Mercury	S24-Jl0018562	NCP	%	93			75-125	Pass	
Nickel	S24-Jl0018562	NCP	%	90			75-125	Pass	
Zinc	S24-Jl0018562	NCP	%	93			75-125	Pass	
Spike - % Recovery									
				Result 1					
Total Kjeldahl Nitrogen (as N)	S24-Jl0008880	CP	%	101			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S24-Jl0012819	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10*	S24-Jl0012819	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S24-Jl0012819	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S24-Jl0012819	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S24-Jl0012819	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S24-Jl0012819	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S24-Jl0012819	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S24-Jl0012819	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
BTEX and Naphthalene				Result 1	Result 2	RPD			
Naphthalene	S24-Jl0012668	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Nitrate & Nitrite (as N)	M24-Jl0014235	NCP	mg/L	0.42	0.41	<1	30%	Pass	
Nitrate (as N)	M24-Jl0014227	NCP	mg/L	< 0.4	< 0.4	<1	30%	Pass	
Nitrite (as N)	M24-Jl0014235	NCP	mg/L	0.11	0.11	1.3	30%	Pass	
Phosphate total (as P)	S24-Jl0008786	NCP	mg/L	96	97	1.3	30%	Pass	
Total Kjeldahl Nitrogen (as N)	M24-Jl0013836	NCP	mg/L	410	330	20	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S24-Jl0010017	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S24-Jl0010017	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S24-Jl0010017	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C10-C16*	S24-Jl0010017	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34*	S24-Jl0010017	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S24-Jl0010017	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S24-Jl0023274	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S24-Jl0008893	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S24-Jl0008893	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S24-Jl0008893	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S24-Jl0008893	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Lead	S24-Jl0008893	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S24-Jl0008893	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S24-Jl0008893	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S24-Jl0008893	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S24-Jl0008894	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S24-Jl0008894	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S24-Jl0008894	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S24-Jl0008894	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	S24-Jl0008894	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S24-Jl0008894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S24-Jl0008894	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S24-Jl0008894	CP	mg/L	< 0.005	0.005	160	30%	Fail	Q15

Comments

Analysis of E.Coli and Thermotolerant coliforms has been completed by Eurofins Food Testing Australia Pty Ltd, NATA Accreditation Number 20293, report reference AR-24-NV-012345-01.

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
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Nileshni Goundar	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Inorganic
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic

Glenn Jackson
Managing Director

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.

Certificate of Analysis

eurofins | Environment Testing

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Raw Earth Environmental Pty Ltd
3/17 Tasman Way
Byron Bay
NSW 2481

Attention:	Jacques Chiomey
Report	1114214-AID
Project Name	DSI-EILEEN O'CONNOR
Project ID	s00360
Received Date	Jul 03, 2024
Date Reported	Jul 12, 2024

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name DSI-EILEEN O'CONNOR
Project ID s00360
Date Sampled Jul 01, 2024
Report 1114214-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
S17-A	24-Jl0008877	Jul 01, 2024	Approximate Sample 952g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
S19A	24-Jl0008878	Jul 01, 2024	Approximate Sample 861g Sample consisted of: Brown coarse-grained clayey soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
S20A	24-Jl0008879	Jul 01, 2024	Approximate Sample 629g Sample consisted of: Brown fine-grained clayey soil, cement and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Sample History

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

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
Asbestos - LTM-ASB-8020	Sydney	Jul 03, 2024	Indefinite

eurofins

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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ABN: 91 05 0159 898

Perth
46-48 Banksia Road
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+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd
ABN: 47 009 120 549

Perth ProMicro
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NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Raw Earth Environmental P/L
Address: 3/17 Tasman Way
Byron Bay
NSW 2481

Project Name: DSI-EILEEN O'CONNOR
Project ID: s00360

Order No.:
Report #: 1114214
Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
Due: Jul 10, 2024
Priority: 5 Day
Contact Name: Jacques Chiomey

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail	Asbestos - WA guidelines	E.coli (MPN)	HOLD*	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254							X					
Sydney Laboratory - NATA # 1261 Site # 1218217	X		X	X	X			X	X	X	X	X
External Laboratory		X				X						

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	S1-0.5	Jul 01, 2024		Soil	S24-Jl0008861								X	X		
2	S3	Jul 01, 2024		Soil	S24-Jl0008862								X	X		
3	S6	Jul 01, 2024		Soil	S24-Jl0008863								X	X		
4	S8	Jul 01, 2024		Soil	S24-Jl0008864								X	X		
5	S11	Jul 01, 2024		Soil	S24-Jl0008865								X	X		
6	S17	Jul 01, 2024		Soil	S24-Jl0008866								X	X		
7	S17-1.8	Jul 01, 2024		Soil	S24-Jl0008867								X	X		
8	S19	Jul 01, 2024		Soil	S24-Jl0008868								X	X		
9	S20	Jul 01, 2024		Soil	S24-Jl0008869								X	X		
10	S21	Jul 01, 2024		Soil	S24-Jl0008870								X	X		
11	QA1	Jul 01, 2024		Soil	S24-Jl0008871								X		X	
12	TS1	Jul 01, 2024		Trip Spike (liquid)	S24-Jl0008872											X

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd
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+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Raw Earth Environmental P/L
Address: 3/17 Tasman Way
Byron Bay
NSW 2481

Project Name: DSI-EILEEN O'CONNOR
Project ID: s00360

Order No.:
Report #: 1114214
Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
Due: Jul 10, 2024
Priority: 5 Day
Contact Name: Jacques Chiomey

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Asbestos - WA guidelines	E.coli (MPN)	HOLD*	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X					
Sydney Laboratory - NATA # 1261 Site # 1254						X		X	X	X			X	X	X	X	X
13	TB1	Jul 01, 2024		Trip Blank (liquid)	S24-Jl0008873											X	
14	S7-1.8	Jul 01, 2024		Soil	S24-Jl0008874								X	X			
15	SW1	Jul 01, 2024		Water	S24-Jl0008875		X		X	X	X	X			X		
16	WQA1	Jul 01, 2024		Water	S24-Jl0008876		X		X	X	X	X			X		
17	S17-A	Jul 01, 2024		Soil	S24-Jl0008877	X											
18	S19A	Jul 01, 2024		Soil	S24-Jl0008878	X											
19	S20A	Jul 01, 2024		Soil	S24-Jl0008879	X											
20	SW2	Jul 01, 2024		Water	S24-Jl0008880		X		X	X	X	X			X		
21	S10	Jul 01, 2024		Soil	S24-Jl0008881								X	X			
22	S13	Jul 01, 2024		Soil	S24-Jl0008882								X	X			
23	S15	Jul 01, 2024		Soil	S24-Jl0008883								X	X			
24	S16	Jul 01, 2024		Soil	S24-Jl0008884								X	X			
25	S22	Jul 01, 2024		Soil	S24-Jl0008885								X	X			
26	S23	Jul 01, 2024		Soil	S24-Jl0008886								X	X			
27	S24	Jul 01, 2024		Soil	S24-Jl0008887								X	X			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
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Company Name: Raw Earth Environmental P/L
Address: 3/17 Tasman Way
Byron Bay
NSW 2481

Project Name: DSI-EILEEN O'CONNOR
Project ID: s00360

Order No.:
Report #: 1114214
Phone: 1300 034 153
Fax:

Received: Jul 3, 2024 3:36 PM
Due: Jul 10, 2024
Priority: 5 Day
Contact Name: Jacques Chiomey

Eurofins Analytical Services Manager : Adam Bateup

Sample Detail						Asbestos - WA guidelines	E.coli (MPN)	HOLD*	pH (at 25 °C)	Phosphate total (as P)	Thermotolerant Coliforms (MPN)	Total Nitrogen Set (as N)	Moisture Set	ENM Exemption Suite - The excavated natural material order 2014 NSW EPA	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X					
Sydney Laboratory - NATA # 1261 Site # 1254						X		X	X	X			X	X	X	X	X
28	QA2	Jul 01, 2024		Soil	S24-Jl0008888								X		X		
29	TS2	Jul 01, 2024		Trip Spike (liquid)	S24-Jl0008889												X
30	TB2	Jul 01, 2024		Trip Blank (liquid)	S24-Jl0008890											X	
31	TSW	Jul 01, 2024		Trip Spike (liquid)	S24-Jl0008891												X
32	TBW	Jul 01, 2024		Trip Blank (liquid)	S24-Jl0008892											X	
33	RINSE-S	Jul 01, 2024		Water	S24-Jl0008893										X		
34	RINSE-W	Jul 01, 2024		Water	S24-Jl0008894		X		X	X	X	X			X		
35	S1-1.8	Jul 01, 2024		Soil	S24-Jl0008895			X									
36	S2	Jul 01, 2024		Soil	S24-Jl0008896			X									
37	S4	Jul 01, 2024		Soil	S24-Jl0008897			X									
38	S7	Jul 01, 2024		Soil	S24-Jl0008898			X									
39	S9	Jul 01, 2024		Soil	S24-Jl0008899			X									
40	S5	Jul 01, 2024		Soil	S24-Jl0008900			X									

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Melbourne Laboratory - NATA # 1261 Site # 1254												X					
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X	X			X	X	X	X	X
41	S12	Jul 01, 2024		Soil	S24-Jl0008901			X									
42	S14	Jul 01, 2024		Soil	S24-Jl0008902			X									
43	S18	Jul 01, 2024		Soil	S24-Jl0008903			X									
Test Counts						3	4	9	4	4	4	4	20	18	7	3	3

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
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.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix may be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**). This estimate is not NATA-accredited.
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to “non-bonded / friable”.
AFM	Airborne Fibre Monitoring, e.g., by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total %w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory’s remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
Sampling	Unless otherwise stated Eurofins are not responsible for sampling equipment or the sampling process.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average %w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

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

Asbestos Counter/Identifier:

Bennel Jiri	Senior Analyst-Asbestos

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos

Glenn Jackson
Managing Director

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.

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

Laboratory	Address	Contact
Sydney Laboratory	179 Magowar Road Girraween NSW 2066	02 9900 8400 EnviroSampleNSW@eurofins.com
Brisbane Laboratory	Unit 1 21 Smallwood Place Murarrie QLD 4172	07 3902 4600 EnviroSampleQLD@eurofins.com
Perth Laboratory	46-48 Banksia Road Welshpool WA 6106	08 6253 4444 Samples@ARLgroup.com.au
Melbourne Laboratory	6 Monterey Road Dandenong South VIC 3175	03 8564 5000 EnviroSampleVic@eurofins.com

Company	Raw Earth Environmental P/L	Project №	S00360	Sampler(s)	Jacob R
Address	3/17 Tasman Way Byron Bay NSW	Project Name	DSI - Eileen O'Connor	Handed over by	Jacob R
Contact Name	Jacob R	Project Manager	Jacques C	Email for Invoice	jacques@rawearthenvironmental.com.au
Phone №	0400995309	EDD Format		Email for Results	jacques@rawearthenvironmental.com.au
Special Directions	Filter metals in lab	Facility Code			
Purchase Order					
Quote ID №					

Required Turnaround Time (TAT): ♦Surcharge will apply — Overnight (reporting by 9am)♦ — Same day♦ — 1 day♦ — 2 days♦ — 3 days♦ — 5 days (Standard) — Other( )

№	Client Sample ID	Sampled Date/Time	Matrix	ENM Analysis	HOLD	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	S1_0.5	1/07/24	Soil	X								1	1	
2	S1_1.8	1/07/24	Soil		X							1	1	
3	S2	1/07/24	Soil		X							1	1	
4	S3	1/07/24	Soil	X								1	1	
5	S4	1/07/24	Soil		X							1	1	
6	S6	1/07/24	Soil	X								1	1	
7	S7	1/07/24	Soil		X							1	1	
8	S8	1/07/24	Soil	X								1	1	
9	S9	1/07/24	Soil		X							1	1	
10	S11	1/07/24	Soil	X								1	1	
	Add Rows		Total Counts	5	5							10	10	

Method of Shipment	Courier (#)	Hand Delivered	Postal	Name	Jacob Romer	Signature	[signature]	Date 7/3/2024	Time 12:00:00 PM
Laboratory Use Only	Received By	[signature]	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	[signature]	Date 4	Time 3:46	Temperature 9.6	
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	Time	Report №	

Eurofins Environment Testing Australia Pty Ltd

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

3/7 pm

1114214

CHAIN OF CUSTODY RECORD

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Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Raw Earth Environmental P/L	Project №		Project Manager	
Address	3/17 Tasman Way Byron Bay NSW	Project Name		EDD Format	Facility Code
Contact Name	Jacob R				
Phone №	0400995309				
Special Directions	Filter metals in lab				
Purchase Order					
Quote ID №					

Sampler(s)	Jacob R	
Handed over by	Jacob R	
Email for Invoice	jacques@rawearthenvironmental.com.au	
Email for Results	jacques@rawearthenvironmental.com.au	

Analyses

№	Client+A6:R15nt Sample ID	Sampled Date/Time	Matrix	ENM Analysis	VTRH/BTEX	B7	Containers: 500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	S17	1/07/24	Soil	X									1	1	
2	S17_1.8	1/07/24	Soil	X									1	1	
3	S19	1/07/24	Soil	X									1	1	
4	S20	1/07/24	Soil	X									1	1	
5	S21	1/07/24	Soil	X									1	1	
6	QA1	1/07/24	Soil			X							1		
7	QA1A	1/07/24	Soil			X							1		SGS to analyse
8	TS1	1/07/24	Water		X						1				
9	TB1	1/07/24	Water		X						1				
10	S7_1.8	2/07/24	Solid	X									1	1	
	Add Rows		Total Counts	6	2	2					2		8	6	

Required Turnaround Time (TAT)

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Overnight (reporting by 9am)*
Same day* 1 day*
2 days* 3 days*
5 days (Standard)
Other( )

Method of Shipment	Courier (#)	Hand Delivered	Postal	Name	Jacob Romer	Signature		Date	7/3/2024	Time	12:00:00 PM

Laboratory Use Only									
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature	
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №	

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Phone №	0400995309					Email for Results	jacques@rawearthenvironmental.com.au
Special Directions	Filter metals in lab						
Purchase Order							
Quote ID №							

№	Clie+A6 R15nt Sample ID	Sampled Date/Time	Matrix	Analyses: B7 + E.Coli, Faecal Coliforms, Total Phosphate, Total Nitrogen and pH	Asbestos DoH WA Method	ENM Analysis	HOLD	Containers: 500mL Plastic	250mL Plastic	60mL Plastic	250mL Amber Glass	40mL VOA vial	50mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	SW1	1/06/24	Water	X				2		2	1	2				
2	WQA1	1/06/24	Water	X				2		2	1	2				
3	WQA1A	1/06/24	Water	X				2		2	1	2				SGS to analyse
4	S17_A	1/06/24	Soil		X										1	
5	S19_A	1/06/24	Soil		X										1	
6	S20_A	1/06/24	Soil		X										1	
7	SW2	2/07/24	Water	X				2		2	1	2				
8	S5	2/07/24	Soil				X							1	1	
9	S10	2/07/24	Soil			X								1	1	
10	S12	2/07/24	Soil				X							1	1	
	Add Rows		Total Counts	4	3	1	2	8		8	4	8		3	6	

Required Turnaround Time (TAT)

*Surcharge will apply

Overnight (reporting by 9am)*

- Same day*
- 1 day*
- 2 days*
- 3 days*
- 5 days (Standard)
- Other( )

Method of Shipment	Courier (#)	Hand Delivered	Postal	Name	Jacob Romer	Signature		Date	7/3/2024	Time	12:06:00 PM

Laboratory Use Only									
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Temperature	
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

Sydney Laboratory
179 Magowar Road Girraween NSW 2068
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
46-48 Banksia Road Welshpool WA 6106
08 6253 4444 Samples@ARLgroup.com.au

Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Raw Earth Environmental Pty.	Project №		Project Manager		Sampler(s)	Jacob R
Address	3/17 Tasman Way Byron Bay NSW	Project Name		EDD Format	Facility Code	Handed over by	Jacob R
Contact Name	Jacob R					Email for Invoice	jacques@rawearthenvironmental.com.au
Phone №	0400995309					Email for Results	jacques@rawearthenvironmental.com.au
Special Directions	Filter metals in lab						
Purchase Order							
Quote ID №							

				Analyses																Containers								Required Turnaround Time (TAT)
				ENM Analysis	B7										HOLD					500mL Plastic	250mL Plastic	60mL Plastic	250mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	*Surcharge will apply Overnight (reporting by 9am) Same day / 1 day 2 days / 3 days 5 days (Standard) Other( )
№	Clie+A6:R15nt Sample ID	Sampled Date/Time	Matrix																									
1	S13	2/07/24	Soil	X																						1	1	
2	S14	2/07/24	Soil												X											1	1	
3	S15	2/07/24	Soil	X																						1	1	
4	S16	2/07/24	Soil	X																						1	1	
5	S18	2/07/24	Soil												X											1	1	
6	S22	2/07/24	Soil	X																						1	1	
7	S23	2/07/24	Soil	X																						1	1	
8	S24	2/07/24	Soil	X																						1	1	
9	QA2	2/07/24	Soil		X																					1		
10	QA2A	2/07/24	Solid		X																					1		SGS to analyse
	Add Rows		Total Counts	6	2										2											10	8	

Method of Shipment	Courier (#)	Hand Delivered	Postal	Name	Jacob Romer	Signature		Date	7/3/2024	Time	12:00:00 PM		
Laboratory Use Only	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Temperature			
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №			

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

Sydney Laboratory
179 Magowar Road Girraween NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
46-48 Banksia Road Welshpool WA 6106
08 6253 4444 Samples@ARLgroup.com.au

Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Raw Earth Environmental P/L	Project №		Project Manager		Sampler(s)	Jacob R
Address	3/17 Tasman Way Byron Bay NSW	Project Name		EDD Format	Facility Code	Handed over by	Jacob R
Contact Name	Jacob R					Email for Invoice	jacques@rawearthenvironmental.com.au
Phone №	0480995309					Email for Results	jacques@rawearthenvironmental.com.au
Special Directions	Filter metals in lab						
Purchase Order							
Quote ID №							

Containers

Required Turnaround Time (TAT)

*Surcharge will apply

Overnight (reporting by 9am)* — Same day* — 1 day* — 2 days* — 3 days* — 5 days (Standard) — Other( )

№	Client Sample ID	Sampled Date/Time	Matrix	Analyses: B7	BTEXVTRH	B7 + E.Coli, Faecal Coliforms, Total Phosphate, Total Nitrogen and pH	500mL Plastic	250mL Plastic	60mL Plastic	250mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	TS2	2/07/24	Water		X						2				
2	TB2	2/07/24	Water		X						2				
3	TSW	2/07/24	Water		X						2				
4	TBW	2/07/24	Water		X						2				
5	RINSE_S	2/07/24	Water	X			2		2	1	2				
6	RINSE_W	2/07/24	Water			X	2		2	1	2				
7															
8															
9															
10															
	Add Rows		Total Counts	1	4	1	4		4	2	12				

Method of Shipment	Courier (#)	Hand Delivered	Postal	Name	Jacob Romer	Signature		Date	7/3/2024	Time	12:00:00 PM

Laboratory Use Only									
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Temperature	
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	

SAMPLE RECEIPT ADVICE

SE267737

CLIENT DETAILS

Contact	Jacques Chiomey
Client	RAW EARTH ENVIRONMENTAL
Address	3/17 Tasman Way Byron Bay BYRON BAY NSW 2481
Telephone	(Not specified)
Facsimile	(Not specified)
Email	jacques@rawearthenvironmental.com.au
Project	**S00360 DSI Eileen O'Connor**
Order Number	**S00360**
Samples	3

LABORATORY DETAILS

Manager	Shane McDermott
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Thu 4/7/2024
Report Due	Thu 11/7/2024
SGS Reference	**SE267737**

SUBMISSION DETAILS

This is to confirm that 3 samples were received on Thursday 4/7/2024. Results are expected to be ready by COB Thursday 11/7/2024. Please quote SGS reference SE267737 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	2 Soil, 1 Water	Type of documentation received	COC
Date documentation received	4/7/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	11.5°C
Sample container provider	Other Lab	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

SAMPLE RECEIPT ADVICE

SE267737

CLIENT DETAILS

Client RAW EARTH ENVIRONMENTAL

Project S00360 DSI Eileen O'Connor

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	QA1A	1	26	7	10	11	7
003	QA2A	1	26	7	10	11	7

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE RECEIPT ADVICE

SE267737

CLIENT DETAILS

Client RAW EARTH ENVIRONMENTAL

Project S00360 DSI Eileen O'Connor

SUMMARY OF ANALYSIS

No.	Sample ID	Moisture Content	PAH (Polynuclear Aromatic Hydrocarbons) in Water	Total Phosphorus by Kjeldahl Digestion DA in	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	QA1A	1	-	-	-	-	-
002	WQA1A	-	22	1	9	11	7
003	QA2A	1	-	-	-	-	-

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE RECEIPT ADVICE

SE267737

CLIENT DETAILS

Client RAW EARTH ENVIRONMENTAL

Project S00360 DSI Eileen O'Connor

SUMMARY OF ANALYSIS

No.	Sample ID	Anions by Ion Chromatography in Water	E. coli and Thermotolerant coliforms in Water	Mercury (dissolved) in Water	Nitrite in Water	pH in water	TKN Kjeldahl Digestion by Discrete Analyser	Trace Metals (Dissolved) in Water by ICPMS
002	WQA1A	1	3	1	2	1	2	7

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Jacques Chiomey
Client	RAW EARTH ENVIRONMENTAL
Address	3/17 Tasman Way Byron Bay BYRON BAY NSW 2481
Telephone	(Not specified)
Facsimile	(Not specified)
Email	jacques@rawearthenvironmental.com.au
Project	**S00360 DSI Eileen O'Connor**
Order Number	**S00360**
Samples	3

LABORATORY DETAILS

Manager	Shane McDermott
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE267737 R0**
Date Received	4/7/2024
Date Reported	11/7/2024

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

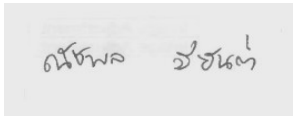
Bennet LO
Senior Chemist

Dong LIANG
Metals/Inorganics Team Leader

Kamrul AHSAN
Senior Chemist

Ly Kim HA
Organic Section Head

Shane MCDERMOTT
Laboratory Manager



Tim MEEYAN
Lab Tech

VOC's in Soil [AN433] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
Benzene	mg/kg	0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
TRH C6-C9	mg/kg	20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
TRH C10-C14	mg/kg	20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
Naphthalene	mg/kg	0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
Arsenic, As	mg/kg	1	<1	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	<0.5	**0.6**
Copper, Cu	mg/kg	0.5	<0.5	<0.5
Lead, Pb	mg/kg	1	<1	**1**
Nickel, Ni	mg/kg	0.5	<0.5	<0.5
Zinc, Zn	mg/kg	2	<2.0	<2.0

Mercury in Soil [AN312] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
Mercury	mg/kg	0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
% Moisture	%w/w	1	**10.0**	**14.7**

VOCs in Water [AN433] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Benzene	µg/L	0.5	<0.5
Toluene	µg/L	0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5
m/p-xylene	µg/L	1	<1
o-xylene	µg/L	0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5
Total BTEX	µg/L	3	<3
Naphthalene (VOC)*	µg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
TRH C6-C9	µg/L	40	<40
Benzene (F0)	µg/L	0.5	<0.5
TRH C6-C10	µg/L	50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
TRH C10-C14	µg/L	50	<50
TRH C15-C28	µg/L	200	<200
TRH C29-C36	µg/L	200	<200
TRH C37-C40	µg/L	200	<200
TRH >C10-C16	µg/L	60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60
TRH >C16-C34 (F3)	µg/L	500	<500
TRH >C34-C40 (F4)	µg/L	500	<500
TRH C10-C40	µg/L	320	<320

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Naphthalene	µg/L	0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1
Fluorene	µg/L	0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1
Anthracene	µg/L	0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1
Pyrene	µg/L	0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1
Chrysene	µg/L	0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1
Total PAH (18)	µg/L	1	<1

Total Phosphorus by Kjeldahl Digestion DA in Water [AN279/AN293(Sydney only)] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	<0.02

pH in water [AN101] Tested: 4/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
pH**	No unit	-	**6.6**

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Arsenic	µg/L	1	<1
Cadmium	µg/L	0.1	<0.1
Chromium	µg/L	1	1
Copper	µg/L	1	3
Lead	µg/L	1	<1
Nickel	µg/L	1	3
Zinc	µg/L	5	64

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 5/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Mercury	mg/L	0.0001	<0.0001

Anions by Ion Chromatography in Water [AN245] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Nitrate Nitrogen, NO3-N	mg/L	0.005	**2.0**

Nitrite in Water [AN277] Tested: 5/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Nitrite Nitrogen, NO2 as N	mg/L	0.005	**0.014**
Total Oxidised Nitrogen, NOx-N	mg/L	0.005	**2.0**

TKN Kjeldahl Digestion by Discrete Analyser [AN292] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Total Kjeldahl Nitrogen	mg/L	0.05	**0.91**
Total Nitrogen (calc)	mg/L	0.05	**2.9**

E. coli, Total and Faecal (Thermotolerant) coliforms in Water [AN735] Tested: 5/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Date & Time Processed*	No unit	-	2024-07-05 09:51
E. coli	MPN/100mL	1	<1
Faecal Coliforms	MPN/100mL	1	<1

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by AAS or ICP as per USEPA Method 200.8.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN245	Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO2, NO3 and SO4 are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B
AN277	Nitrite ions, when reacted with a reagent containing sulphanilamide and N-(1-naphthyl)-ethylenediamine dihydrochloride produce a highly coloured azo dye that is measured photometrically at 540nm.
AN279/AN293(Sydney)	The sample is digested with Sulphuric acid, K2SO4 and CuSO4. All forms of phosphorus are converted into orthophosphate. The digest is cooled and placed on the discrete analyser for colorimetric analysis.
AN281	An unfiltered water or soil sample is first digested in a block digestor with sulfuric acid, K2SO4 and CuSO4. The ammonia produced following digestion is then measured colourimetrically using the Discrete Analyser. A portion of the digested sample is buffered to an alkaline pH, and interfering cations are complexed. The ammonia then reacts with salicylate and hypochlorite to give a blue colour whose absorbance is measured at 660nm and compared with calibration standards. This is proportional to the concentration of Total Kjeldahl Nitrogen in the original sample.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .

AN420	Carcinogenic PAHs may be expressed as Benzo(a)pyrene equivalents by applying the BaP toxicity equivalence factor (NEPM 1999, June 2013, B7). These can be reported as the individual PAHs and as a sum of carcinogenic PAHs. The sum is reported three ways, the first assuming all <LOR results are zero, the second assuming all < LOR results are half the LOR and the third assuming all <LOR results are the LOR.
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN735	The Colilert matrix contains two nutrient indicators, ONPG (ortho-nitro-phenyl B-d- galactopyranoside) and MUG (4-methyl-umbelliferyl B-d-glucruonide). As coliforms grow, they use B-galactosidase to metabolise ONPG which causes yellow colouration of the matrix via the nitro-phenyl. E.coli possesses an additional enzyme, B-glucuronidase, which it uses to metabolise MUG and display florescence (caused by the 4 methyl-umbelliferyl). Incubation at 37°C.
AN735	Non target organisms are suppressed by a combination of high salts, detergents etc. present within the matrix. Faecal coliforms are thermotolerant, thus they can be enumerated by testing at 44.5°C.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

STATEMENT OF QA/QC PERFORMANCE

SE267737 R0

CLIENT DETAILS

Contact	Jacques Chiomey
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Project	**S00360 DSI Eileen O'Connor**
Order Number	**S00360**
Samples	3

LABORATORY DETAILS

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SGS Reference	**SE267737 R0**
Date Received	04 Jul 2024
Date Reported	11 Jul 2024

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	Anions by Ion Chromatography in Water	1 item
	E. coli, Total and Faecal (Thermotolerant) coliforms in Water	1 item
	Mercury (dissolved) in Water	1 item
	Nitrite in Water	1 item
	PAH (Polynuclear Aromatic Hydrocarbons) in Water	1 item
	pH in water	1 item
	TKN Kjeldahl Digestion by Discrete Analyser	1 item
	Total Phosphorus by Kjeldahl Digestion DA in Water	1 item
	TRH (Total Recoverable Hydrocarbons) in Water	1 item
	VOCs in Water	1 item
	Volatile Petroleum Hydrocarbons in Water	1 item
Analysis Date	Anions by Ion Chromatography in Water	1 item
	E. coli, Total and Faecal (Thermotolerant) coliforms in Water	1 item
	Mercury (dissolved) in Water	1 item

There are more than 15 quality objective exceedences. Please see report for details

SAMPLE SUMMARY

Sample counts by matrix	2 Soil, 1 Water	Type of documentation received	COC
Date documentation received	4/7/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	11.5°C
Sample container provider	Other Lab	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE267737 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317098	01 Jun 2024	04 Jul 2024	29 Jun 2024	08 Jul 2024†	29 Jun 2024	10 Jul 2024†

E. coli, Total and Faecal (Thermotolerant) coliforms in Water

Method: ME-(AU)-[ENV]AN735

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB316944	01 Jun 2024	04 Jul 2024	02 Jun 2024	05 Jul 2024†	08 Jul 2024	09 Jul 2024†

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB316931	01 Jun 2024	04 Jul 2024	29 Jun 2024	05 Jul 2024†	29 Jun 2024	05 Jul 2024†

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316969	01 Jul 2024	04 Jul 2024	29 Jul 2024	05 Jul 2024	29 Jul 2024	09 Jul 2024
QA2A	SE267737.003	LB316969	02 Jul 2024	04 Jul 2024	30 Jul 2024	05 Jul 2024	30 Jul 2024	09 Jul 2024

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316967	01 Jul 2024	04 Jul 2024	15 Jul 2024	05 Jul 2024	10 Jul 2024	08 Jul 2024
QA2A	SE267737.003	LB316967	02 Jul 2024	04 Jul 2024	16 Jul 2024	05 Jul 2024	10 Jul 2024	08 Jul 2024

Nitrite in Water

Method: ME-(AU)-[ENV]AN277

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB316964	01 Jun 2024	04 Jul 2024	05 Jun 2024	05 Jul 2024†	05 Jun 2024	10 Jul 2024†

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316963	01 Jul 2024	04 Jul 2024	15 Jul 2024	05 Jul 2024	14 Aug 2024	08 Jul 2024
QA2A	SE267737.003	LB316963	02 Jul 2024	04 Jul 2024	16 Jul 2024	05 Jul 2024	14 Aug 2024	08 Jul 2024

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317036	01 Jun 2024	04 Jul 2024	08 Jun 2024	08 Jul 2024†	17 Aug 2024	10 Jul 2024

pH in water

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB316868	01 Jun 2024	04 Jul 2024	02 Jun 2024	04 Jul 2024†	02 Jun 2024	04 Jul 2024†

TKN Kjeldahl Digestion by Discrete Analyser

Method: ME-(AU)-[ENV]AN292

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317096	01 Jun 2024	04 Jul 2024	29 Jun 2024	08 Jul 2024†	29 Jun 2024	10 Jul 2024†

Total Phosphorus by Kjeldahl Digestion DA in Water

Method: ME-(AU)-[ENV]AN279/AN293(Sydney only)

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317096	01 Jun 2024	04 Jul 2024	29 Jun 2024	08 Jul 2024†	29 Jun 2024	10 Jul 2024†

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316968	01 Jul 2024	04 Jul 2024	28 Dec 2024	05 Jul 2024	28 Dec 2024	09 Jul 2024
QA2A	SE267737.003	LB316968	02 Jul 2024	04 Jul 2024	29 Dec 2024	05 Jul 2024	29 Dec 2024	09 Jul 2024

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317031	01 Jun 2024	04 Jul 2024	28 Nov 2024	08 Jul 2024	28 Nov 2024	08 Jul 2024

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref

HOLDING TIME SUMMARY

SE267737 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316963	01 Jul 2024	04 Jul 2024	15 Jul 2024	05 Jul 2024	14 Aug 2024	08 Jul 2024
QA2A	SE267737.003	LB316963	02 Jul 2024	04 Jul 2024	16 Jul 2024	05 Jul 2024	14 Aug 2024	08 Jul 2024

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317036	01 Jun 2024	04 Jul 2024	08 Jun 2024	08 Jul 2024†	17 Aug 2024	10 Jul 2024

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316966	01 Jul 2024	04 Jul 2024	15 Jul 2024	05 Jul 2024	15 Jul 2024	08 Jul 2024
QA2A	SE267737.003	LB316966	02 Jul 2024	04 Jul 2024	16 Jul 2024	05 Jul 2024	16 Jul 2024	08 Jul 2024

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317116	01 Jun 2024	04 Jul 2024	15 Jun 2024	08 Jul 2024†	15 Jun 2024	09 Jul 2024†

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316966	01 Jul 2024	04 Jul 2024	15 Jul 2024	05 Jul 2024	15 Jul 2024	08 Jul 2024
QA2A	SE267737.003	LB316966	02 Jul 2024	04 Jul 2024	16 Jul 2024	05 Jul 2024	16 Jul 2024	08 Jul 2024

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317116	01 Jun 2024	04 Jul 2024	15 Jun 2024	08 Jul 2024†	15 Jun 2024	09 Jul 2024†

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	QA1A	SE267737.001	%	70 - 130%	96
	QA2A	SE267737.003	%	70 - 130%	101
d14-p-terphenyl (Surrogate)	QA1A	SE267737.001	%	70 - 130%	99
	QA2A	SE267737.003	%	70 - 130%	101
d5-nitrobenzene (Surrogate)	QA1A	SE267737.001	%	70 - 130%	96
	QA2A	SE267737.003	%	70 - 130%	103

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	60
d14-p-terphenyl (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	68
d5-nitrobenzene (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	61

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QA1A	SE267737.001	%	60 - 130%	95
	QA2A	SE267737.003	%	60 - 130%	99
d4-1,2-dichloroethane (Surrogate)	QA1A	SE267737.001	%	60 - 130%	98
	QA2A	SE267737.003	%	60 - 130%	108
d8-toluene (Surrogate)	QA1A	SE267737.001	%	60 - 130%	107
	QA2A	SE267737.003	%	60 - 130%	113

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	93
d4-1,2-dichloroethane (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	101
d8-toluene (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	81

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QA1A	SE267737.001	%	60 - 130%	95
	QA2A	SE267737.003	%	60 - 130%	99
d4-1,2-dichloroethane (Surrogate)	QA1A	SE267737.001	%	60 - 130%	98
	QA2A	SE267737.003	%	60 - 130%	108
d8-toluene (Surrogate)	QA1A	SE267737.001	%	60 - 130%	107
	QA2A	SE267737.003	%	60 - 130%	113

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	93
d4-1,2-dichloroethane (Surrogate)	WQA1A	SE267737.002	%	60 - 130%	101
d8-toluene (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	81

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

Sample Number	Parameter	Units	LOR	Result
LB317098.001	Nitrate Nitrogen, NO3-N	mg/L	0.005	<0.005

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB316931.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB316969.001	Mercury	mg/kg	0.05	<0.05

Nitrite in Water

Method: ME-(AU)-[ENV]AN277

Sample Number	Parameter	Units	LOR	Result
LB316964.001	Nitrite Nitrogen, NO2 as N	mg/L	0.005	<0.005

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB316963.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	99
		2-fluorobiphenyl (Surrogate)	%	-	98
		d14-p-terphenyl (Surrogate)	%	-	103

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB317036.001	Naphthalene	µg/L	0.1	<0.1
	2-methylnaphthalene	µg/L	0.1	<0.1
	1-methylnaphthalene	µg/L	0.1	<0.1
	Acenaphthylene	µg/L	0.1	<0.1
	Acenaphthene	µg/L	0.1	<0.1
	Fluorene	µg/L	0.1	<0.1
	Phenanthrene	µg/L	0.1	<0.1
	Anthracene	µg/L	0.1	<0.1
	Fluoranthene	µg/L	0.1	<0.1
	Pyrene	µg/L	0.1	<0.1
	Benzo(a)anthracene	µg/L	0.1	<0.1
	Chrysene	µg/L	0.1	<0.1
	Benzo(a)pyrene	µg/L	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
	Dibenzo(ah)anthracene	µg/L	0.1	<0.1
	Benzo(ghi)perylene	µg/L	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Water (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB317036.001	Surrogates	d5-nitrobenzene (Surrogate)	%	-	72
		2-fluorobiphenyl (Surrogate)	%	-	76
		d14-p-terphenyl (Surrogate)	%	-	84

Total Phosphorus by Kjeldahl Digestion DA in Water

Method: ME-(AU)-[ENV]AN279/AN293(Sydney only)

Sample Number	Parameter	Units	LOR	Result
LB317096.001	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	<0.02

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB316968.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB317031.001	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1
	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB316963.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB317036.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB316966.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	119
		d8-toluene (Surrogate)	%	-	126
		Bromofluorobenzene (Surrogate)	%	-	107
	Totals	Total BTEX*	mg/kg	0.6	<0.6

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB317116.001	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB317116.001	Monocyclic Aromatic	o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene (VOC)*	µg/L	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	98
		d8-toluene (Surrogate)	%	-	84
		Bromofluorobenzene (Surrogate)	%	-	91

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB316966.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	119

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB317116.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	98
		d8-toluene (Surrogate)	%	-	84
		Bromofluorobenzene (Surrogate)	%	-	91

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267707.001	LB317098.014	Nitrate Nitrogen, NO3-N	mg/L	0.005	0.88	0.85	16	4

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267703.001	LB316931.014	Mercury	µg/L	0.0001	<0.0001	<0.0001	140	0

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316969.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE267737.003	LB316969.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316967.011	% Moisture	%w/w	1	14.5	10.5	38	32
SE267737.003	LB316967.021	% Moisture	%w/w	1	14.7	15.3	37	4

Nitrite in Water

Method: ME-(AU)-[ENV]AN277

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267756.001	LB316964.014	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.17	0.17	18	1
SE267764.007	LB316964.024	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.019	0.018	42	4

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316963.014		Naphthalene	mg/kg	0.1	0.1	0.1	113	32
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	0.4	0.4	54	10
			Acenaphthene	mg/kg	0.1	0.3	0.2	71	43
			Fluorene	mg/kg	0.1	0.4	0.2	65	43
			Phenanthrene	mg/kg	0.1	4.9	4.0	32	19
			Anthracene	mg/kg	0.1	1.6	1.3	37	21
			Fluoranthene	mg/kg	0.1	11	11	31	0
			Pyrene	mg/kg	0.1	12	10	31	15
			Benzo(a)anthracene	mg/kg	0.1	4.7	4.0	32	15
			Chrysene	mg/kg	0.1	4.7	4.1	32	12
			Benzo(b&j)fluoranthene	mg/kg	0.1	6.5	5.7	32	14
			Benzo(k)fluoranthene	mg/kg	0.1	2.4	2.2	34	10
			Benzo(a)pyrene	mg/kg	0.1	5.8	5.1	32	13
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	4.2	3.7	33	13
			Dibenzo(ah)anthracene	mg/kg	0.1	0.7	0.6	46	12
			Benzo(ghi)perylene	mg/kg	0.1	4.7	4.1	32	15
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	8.4	7.3	13	13
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	8.4	7.3	13	13
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	8.4	7.3	14	13
			Total PAH (18)	mg/kg	0.8	64	57	30	12
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	0
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE267737.003	LB316963.023		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267737.003	LB316963.023		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	5

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267734.004	LB317036.028		Naphthalene	µg/L	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
			Acenaphthylene	µg/L	0.1	<0.1	<0.1	200	0
			Acenaphthene	µg/L	0.1	<0.1	<0.1	200	0
			Fluorene	µg/L	0.1	<0.1	<0.1	200	0
			Phenanthrene	µg/L	0.1	<0.1	<0.1	200	0
			Anthracene	µg/L	0.1	<0.1	<0.1	200	0
			Fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
			Pyrene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	200	0
			Chrysene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.4	0.4	30	1
			2-fluorobiphenyl (Surrogate)	µg/L	-	0.4	0.4	30	4
			d14-p-terphenyl (Surrogate)	µg/L	-	0.4	0.4	30	1

pH in water

Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267741.001	LB316868.008	pH**	pH Units	-	6.8	6.8	16	0

TKN Kjeldahl Digestion by Discrete Analyser

Method: ME-(AU)-[ENV]AN292

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267652.001	LB317096.028	Total Kjeldahl Nitrogen	mg/L	0.05	90	80	15	12
SE267710.002	LB317096.014	Total Kjeldahl Nitrogen	mg/L	0.05	0.58	0.59	24	1

Total Phosphorus by Kjeldahl Digestion DA in Water

Method: ME-(AU)-[ENV]AN279/AN293(Sydney only)

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267652.001	LB317096.028	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	12	13	15	8
SE267710.002	LB317096.014	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	0.16	0.17	27	7

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316968.014	Arsenic, As	mg/kg	1	5	4	52	2
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	12	26	33	72 ②
		Copper, Cu	mg/kg	0.5	19	20	33	4
		Nickel, Ni	mg/kg	0.5	5.4	5.5	39	1
		Lead, Pb	mg/kg	1	23	21	35	11
		Zinc, Zn	mg/kg	2	38	44	35	15
SE267737.003	LB316968.024	Arsenic, As	mg/kg	1	<1	<1	200	0
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	0.6	0.6	111	2
		Copper, Cu	mg/kg	0.5	<0.5	<0.5	200	0
		Nickel, Ni	mg/kg	0.5	<0.5	<0.5	200	0
		Lead, Pb	mg/kg	1	1	1	118	17
		Zinc, Zn	mg/kg	2	<2.0	<2.0	200	0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267686.001	LB317031.014	Arsenic	µg/L	1	<1	<1	200	0
		Cadmium	µg/L	0.1	<0.1	<0.1	170	0
		Chromium	µg/L	1	<1	<1	200	0
		Copper	µg/L	1	16	17	21	1
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	25	25	19	1
		Zinc	µg/L	5	8	7	82	20
SE267737.002	LB317031.023	Arsenic	µg/L	1	<1	<1	200	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	1	<1	124	5
		Copper	µg/L	1	3	3	49	3
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	3	3	47	2
		Zinc	µg/L	5	64	64	23	1

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316963.014		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	440	180	45	82 ②
			TRH C29-C36	mg/kg	45	140	96	68	39
			TRH C37-C40	mg/kg	100	<100	<100	192	0
			TRH C10-C36 Total	mg/kg	110	580	280	56	70 ②
			TRH >C10-C40 Total (F bands)	mg/kg	210	650	250	77	90 ②
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	530	250	53	72 ②
			TRH >C34-C40 (F4)	mg/kg	120	130	<120	149	6
SE267737.003	LB316963.023		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267734.004	LB317036.028	TRH C10-C14	µg/L	50	<50	<50	136	0
		TRH C15-C28	µg/L	200	210	210	124	3
		TRH C29-C36	µg/L	200	<200	<200	200	0
		TRH C37-C40	µg/L	200	<200	<200	200	0
		TRH C10-C40	µg/L	320	<320	340	128	6

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

TRH (Total Recoverable Hydrocarbons) in Water (continued)

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267734.004	LB317036.028	TRH F Bands	TRH >C10-C16	µg/L	60	74	73	112	1
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	74	73	112	1
			TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0
			TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316966.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	0.1	<0.1	143	6
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.1	7.9	50	14
			d8-toluene (Surrogate)	mg/kg	-	9.5	9.1	50	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	8.6	50	6
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE267737.003	LB316966.023	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.8	10.3	50	5
			d8-toluene (Surrogate)	mg/kg	-	11.3	10.5	50	8
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.9	9.3	50	7
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267650.001	LB317116.023	Monocyclic	Benzene	µg/L	0.5	0.012715648	30.055577462	3 200	0
		Aromatic	Toluene	µg/L	0.5	0.014301986	10.028670432	4 200	0
			Ethylbenzene	µg/L	0.5	0.003830779	70.018166348	7 200	0
			m/p-xylene	µg/L	1	0.009595926	40.036356052	0 200	0
			o-xylene	µg/L	0.5	0.003789434	70.017849754	9 200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	0.115785760	7 0	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11.30520325	310.096822901	7 30	11
			d8-toluene (Surrogate)	µg/L	-	8.389408357	38.825469083	6 30	5
			Bromofluorobenzene (Surrogate)	µg/L	-	9.164666887	97.309169973	3 30	23
		Totals	Total BTEX	µg/L	3	0	0	200	0
SE267794.001	LB317116.024	Monocyclic	Benzene	µg/L	0.5	0.013138787	7 0	200	0
		Aromatic	Toluene	µg/L	0.5	0.011912545	70.016193299	2 200	0
			Ethylbenzene	µg/L	0.5	0.003803063	40.009711947	0 200	0
			m/p-xylene	µg/L	1	0.010740760	10.020112127	7 200	0
			o-xylene	µg/L	0.5	0.009622515	90.010631637	5 200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	0.114062493	6 0	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.18072991	659.931321444	1 30	2
			d8-toluene (Surrogate)	µg/L	-	8.284995193	69.815047258	6 30	17
			Bromofluorobenzene (Surrogate)	µg/L	-	9.433627446	68.146445271	1 30	15
		Totals	Total BTEX	µg/L	3	0	0	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316966.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.1	7.9	50	14
			d8-toluene (Surrogate)	mg/kg	-	9.5	9.1	50	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	8.6	50	6
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267737.003	LB316966.023		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.8	10.3	50	5
			d8-toluene (Surrogate)	mg/kg	-	11.3	10.5	50	8
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.9	9.3	50	7
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267650.001	LB317116.023		TRH C6-C10	µg/L	50	<50	<50	200	0
			TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11.3	10.1	30	11
			d8-toluene (Surrogate)	µg/L	-	8.4	8.8	30	5
			Bromofluorobenzene (Surrogate)	µg/L	-	9.2	7.3	30	23
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	200	0
SE267794.001	LB317116.024		TRH C6-C10	µg/L	50	<50	<50	200	0
			TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.2	9.9	30	2
			d8-toluene (Surrogate)	µg/L	-	8.3	9.8	30	17
			Bromofluorobenzene (Surrogate)	µg/L	-	9.4	8.1	30	15
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317098.002	Nitrate Nitrogen, NO3-N	mg/L	0.005	1.9	2	80 - 120	96

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316969.002	Mercury	mg/kg	0.05	0.19	0.2	80 - 120	95

Nitrite in Water

Method: ME-(AU)-[ENV]AN277

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316964.002	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.11	0.1	80 - 120	113

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316963.002		Naphthalene	mg/kg	0.1	4.7	4	60 - 140	118
		Acenaphthylene	mg/kg	0.1	4.9	4	60 - 140	122
		Acenaphthene	mg/kg	0.1	4.7	4	60 - 140	117
		Phenanthrene	mg/kg	0.1	4.9	4	60 - 140	122
		Anthracene	mg/kg	0.1	5.3	4	60 - 140	131
		Fluoranthene	mg/kg	0.1	4.6	4	60 - 140	115
		Pyrene	mg/kg	0.1	5.2	4	60 - 140	131
		Benzo(a)pyrene	mg/kg	0.1	5.6	4	60 - 140	139
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	99
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	107

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317036.002		Naphthalene	µg/L	0.1	30	40	60 - 140	74
		Acenaphthylene	µg/L	0.1	33	40	60 - 140	82
		Acenaphthene	µg/L	0.1	31	40	60 - 140	77
		Phenanthrene	µg/L	0.1	30	40	60 - 140	75
		Anthracene	µg/L	0.1	30	40	60 - 140	74
		Fluoranthene	µg/L	0.1	29	40	60 - 140	73
		Pyrene	µg/L	0.1	26	40	60 - 140	66
		Benzo(a)pyrene	µg/L	0.1	35	40	60 - 140	87
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.3	0.5	40 - 130	56
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.4	0.5	40 - 130	80
		d14-p-terphenyl (Surrogate)	µg/L	-	0.3	0.5	40 - 130	64

pH in water

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316868.003	pH**	No unit	-	7.4	7.415	98 - 102	100

Total Phosphorus by Kjeldahl Digestion DA in Water

Method: ME-(AU)-[ENV]AN279/AN293(Sydney only)

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317096.002	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	1.2	1	80 - 120	118

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316968.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	104
	Cadmium, Cd	mg/kg	0.3	4.6	4.81	70 - 130	95
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	107
	Copper, Cu	mg/kg	0.5	290	290	80 - 120	100
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	99
	Lead, Pb	mg/kg	1	89	89.9	80 - 120	99

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316968.002	Zinc, Zn	mg/kg	2	270	273	80 - 120	97

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317031.002	Arsenic	µg/L	1	20	20	80 - 120	100
	Cadmium	µg/L	0.1	21	20	80 - 120	104
	Chromium	µg/L	1	22	20	80 - 120	109
	Copper	µg/L	1	22	20	80 - 120	109
	Lead	µg/L	1	20	20	80 - 120	102
	Nickel	µg/L	1	21	20	80 - 120	106
	Zinc	µg/L	5	23	20	80 - 120	115

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316963.002		TRH C10-C14	mg/kg	20	54	40	60 - 140	136
		TRH C15-C28	mg/kg	45	55	40	60 - 140	138
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	91
	TRH F Bands	TRH >C10-C16	mg/kg	25	55	40	60 - 140	138
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	119
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	85

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317036.002		TRH C10-C14	µg/L	50	1200	1200	60 - 140	101
		TRH C15-C28	µg/L	200	1400	1200	60 - 140	121
		TRH C29-C36	µg/L	200	1500	1200	60 - 140	121
	TRH F Bands	TRH >C10-C16	µg/L	60	1400	1200	60 - 140	113
		TRH >C16-C34 (F3)	µg/L	500	1500	1200	60 - 140	122
		TRH >C34-C40 (F4)	µg/L	500	740	600	60 - 140	123

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316966.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.1	5	60 - 140	83
		Toluene	mg/kg	0.1	5.9	5	60 - 140	118
		Ethylbenzene	mg/kg	0.1	4.9	5	60 - 140	97
		m/p-xylene	mg/kg	0.2	10	10	60 - 140	102
		o-xylene	mg/kg	0.1	5.1	5	60 - 140	102
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.8	10	70 - 130	108
		d8-toluene (Surrogate)	mg/kg	-	11.7	10	70 - 130	117
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.3	10	70 - 130	93

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317116.002	Monocyclic Aromatic	Benzene	µg/L	0.5	57	45.45	60 - 140	126
		Toluene	µg/L	0.5	51	45.45	60 - 140	112
		Ethylbenzene	µg/L	0.5	57	45.45	60 - 140	125
		m/p-xylene	µg/L	1	120	90.9	60 - 140	137
		o-xylene	µg/L	0.5	63	45.45	60 - 140	138
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.5	10	60 - 140	85
		d8-toluene (Surrogate)	µg/L	-	8.2	10	70 - 130	82
		Bromofluorobenzene (Surrogate)	µg/L	-	9.8	10	70 - 130	98

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316966.002		TRH C6-C10	mg/kg	25	77	92.5	60 - 140	83
		TRH C6-C9	mg/kg	20	67	80	60 - 140	83
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.8	10	70 - 130	108
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.3	10	70 - 130	93
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	46	62.5	60 - 140	74

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Volatile Petroleum Hydrocarbons in Water (continued) — **Method: ME-(AU)-[ENV]AN433**

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317116.002		TRH C6-C10	µg/L	50	860	946.63	60 - 140	91
		TRH C6-C9	µg/L	40	730	818.71	60 - 140	89
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.5	10	60 - 140	85
		d8-toluene (Surrogate)	µg/L	-	8.2	10	70 - 130	82
		Bromofluorobenzene (Surrogate)	µg/L	-	9.8	10	70 - 130	98
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	510	639.67	60 - 140	79

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267425A.001	LB316931.004	Mercury	mg/L	0.0001	0.0023	<0.0001	0.008	118

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267760.001	LB316969.004	Mercury	mg/kg	0.05	0.26	0.11	0.2	79

Nitrite in Water

Method: ME-(AU)-[ENV]AN277

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267709.001	LB316964.004	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.086	<0.005	0.1	87

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267760.001	LB316963.004		Naphthalene	mg/kg	0.1	4.6	<0.1	4	115
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	4.9	<0.1	4	121
			Acenaphthene	mg/kg	0.1	4.7	<0.1	4	117
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	4.9	<0.1	4	122
			Anthracene	mg/kg	0.1	5.2	<0.1	4	130
			Fluoranthene	mg/kg	0.1	4.6	<0.1	4	113
			Pyrene	mg/kg	0.1	5.0	<0.1	4	124
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	5.5	<0.1	4	137
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	5.5	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	5.6	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	5.7	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	39	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	94
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	99
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	103

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267760.001	LB316968.004	Arsenic, As	mg/kg	1	55	11	50	87
		Cadmium, Cd	mg/kg	0.3	44	1.1	50	87
		Chromium, Cr	mg/kg	0.5	71	35	50	73
		Copper, Cu	mg/kg	0.5	100	64	50	73
		Nickel, Ni	mg/kg	0.5	51	6.9	50	89
		Lead, Pb	mg/kg	1	240	230	50	5 ④
		Zinc, Zn	mg/kg	2	200	180	50	57 ④

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267645.001	LB317031.004	Arsenic	µg/L	1	22	<1	20	108
		Cadmium	µg/L	0.1	20	<0.1	20	101
		Copper	µg/L	1	20	<1	20	98
		Lead	µg/L	1	20	<1	20	100
		Nickel	µg/L	1	20	<1	20	96
		Zinc	µg/L	5	30	8	20	110

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267760.001	LB316963.004		TRH C10-C14	mg/kg	20	51	<20	40	119
			TRH C15-C28	mg/kg	45	55	<45	40	117
			TRH C29-C36	mg/kg	45	<45	<45	40	75
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	52	<25	40	121
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	52	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	93
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267760.001	LB316966.004	Monocyclic	Benzene	mg/kg	0.1	4.2	<0.1	5	84
		Aromatic	Toluene	mg/kg	0.1	6.3	<0.1	5	127
			Ethylbenzene	mg/kg	0.1	5.3	<0.1	5	106
			m/p-xylene	mg/kg	0.2	12	<0.2	10	119
			o-xylene	mg/kg	0.1	6.0	<0.1	5	119
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.3	10.7	10	93
			d8-toluene (Surrogate)	mg/kg	-	9.7	10.1	10	97
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.1	8.9	10	81
		Totals	Total BTEX*	mg/kg	0.6	34	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	18	<0.3	-	-

VOCs in Water

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE267649.001	LB317116.022	Monocyclic	Benzene	µg/L	0.5	0.01262657330	45.45	108
		Aromatic	Toluene	µg/L	0.5	0.00995740420	45.45	107
			Ethylbenzene	µg/L	0.5	0.00442951060	45.45	106
			m/p-xylene	µg/L	1	0.01311410169	90.9	105
			o-xylene	µg/L	0.5	0.00523152792	45.45	103
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	0.12118071301	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.5246131907	-	92
			d8-toluene (Surrogate)	µg/L	-	8.20097877352	-	93
			Bromofluorobenzene (Surrogate)	µg/L	-	9.24957541035	-	104
		Totals	Total BTEX	µg/L	3	0	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267760.001	LB316966.004		TRH C6-C10	mg/kg	25	120	<25	92.5	129
			TRH C6-C9	mg/kg	20	100	<20	80	130
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.3	10.7	10	93
			d8-toluene (Surrogate)	mg/kg	-	9.7	10.1	10	97
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.1	8.9	-	81
		VPH F	Benzene (F0)	mg/kg	0.1	4.2	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	87	<25	62.5	138

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE267649.001	LB317116.022		TRH C6-C10	µg/L	50	0	946.63	84
			TRH C6-C9	µg/L	40	0	818.71	87
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.5246131907	-	92
			d8-toluene (Surrogate)	µg/L	-	8.20097877352	-	93
			Bromofluorobenzene (Surrogate)	µg/L	-	9.24957541035	-	104
		VPH F	Benzene (F0)	µg/L	0.5	0.01262657330	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	0	639.67	79

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: https://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Project	**S00360 DSI Eileen O'Connor**
Order Number	**S00360**
Samples	3

LABORATORY DETAILS

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SGS Reference	**SE267737 R0**
Date Received	4/7/2024
Date Reported	11/7/2024

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

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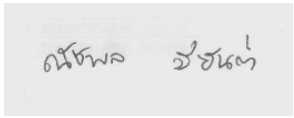

Tim MEEYAN
Lab Tech

VOC's in Soil [AN433] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
Benzene	mg/kg	0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
TRH C6-C9	mg/kg	20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
TRH C10-C14	mg/kg	20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
Naphthalene	mg/kg	0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
Arsenic, As	mg/kg	1	<1	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	<0.5	**0.6**
Copper, Cu	mg/kg	0.5	<0.5	<0.5
Lead, Pb	mg/kg	1	<1	**1**
Nickel, Ni	mg/kg	0.5	<0.5	<0.5
Zinc, Zn	mg/kg	2	<2.0	<2.0

Mercury in Soil [AN312] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
Mercury	mg/kg	0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 5/7/2024

PARAMETER	UOM	LOR	QA1A SOIL - 1/7/2024 SE267737.001	QA2A SOIL - 2/7/2024 SE267737.003
% Moisture	%w/w	1	**10.0**	**14.7**

VOCs in Water [AN433] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Benzene	µg/L	0.5	<0.5
Toluene	µg/L	0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5
m/p-xylene	µg/L	1	<1
o-xylene	µg/L	0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5
Total BTEX	µg/L	3	<3
Naphthalene (VOC)*	µg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
TRH C6-C9	µg/L	40	<40
Benzene (F0)	µg/L	0.5	<0.5
TRH C6-C10	µg/L	50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
TRH C10-C14	µg/L	50	<50
TRH C15-C28	µg/L	200	<200
TRH C29-C36	µg/L	200	<200
TRH C37-C40	µg/L	200	<200
TRH >C10-C16	µg/L	60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60
TRH >C16-C34 (F3)	µg/L	500	<500
TRH >C34-C40 (F4)	µg/L	500	<500
TRH C10-C40	µg/L	320	<320

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Naphthalene	µg/L	0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1
Fluorene	µg/L	0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1
Anthracene	µg/L	0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1
Pyrene	µg/L	0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1
Chrysene	µg/L	0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1
Total PAH (18)	µg/L	1	<1

Total Phosphorus by Kjeldahl Digestion DA in Water [AN279/AN293(Sydney only)] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	<0.02

pH in water [AN101] Tested: 4/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
pH**	No unit	-	**6.6**

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Arsenic	µg/L	1	<1
Cadmium	µg/L	0.1	<0.1
Chromium	µg/L	1	1
Copper	µg/L	1	3
Lead	µg/L	1	<1
Nickel	µg/L	1	3
Zinc	µg/L	5	64

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 5/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Mercury	mg/L	0.0001	<0.0001

Anions by Ion Chromatography in Water [AN245] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Nitrate Nitrogen, NO3-N	mg/L	0.005	**2.0**

Nitrite in Water [AN277] Tested: 5/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Nitrite Nitrogen, NO2 as N	mg/L	0.005	**0.014**
Total Oxidised Nitrogen, NOx-N	mg/L	0.005	**2.0**

TKN Kjeldahl Digestion by Discrete Analyser [AN292] Tested: 8/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Total Kjeldahl Nitrogen	mg/L	0.05	**0.91**
Total Nitrogen (calc)	mg/L	0.05	**2.9**

E. coli, Total and Faecal (Thermotolerant) coliforms in Water [AN735] Tested: 5/7/2024

PARAMETER	UOM	LOR	WQA1A WATER - 1/6/2024 SE267737.002
Date & Time Processed*	No unit	-	2024-07-05 09:51
E. coli	MPN/100mL	1	<1
Faecal Coliforms	MPN/100mL	1	<1

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by AAS or ICP as per USEPA Method 200.8.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN245	Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO2, NO3 and SO4 are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B
AN277	Nitrite ions, when reacted with a reagent containing sulphanilamide and N-(1-naphthyl)-ethylenediamine dihydrochloride produce a highly coloured azo dye that is measured photometrically at 540nm.
AN279/AN293(Sydney)	The sample is digested with Sulphuric acid, K2SO4 and CuSO4. All forms of phosphorus are converted into orthophosphate. The digest is cooled and placed on the discrete analyser for colorimetric analysis.
AN281	An unfiltered water or soil sample is first digested in a block digestor with sulfuric acid, K2SO4 and CuSO4. The ammonia produced following digestion is then measured colourimetrically using the Discrete Analyser. A portion of the digested sample is buffered to an alkaline pH, and interfering cations are complexed. The ammonia then reacts with salicylate and hypochlorite to give a blue colour whose absorbance is measured at 660nm and compared with calibration standards. This is proportional to the concentration of Total Kjeldahl Nitrogen in the original sample.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .

AN420	Carcinogenic PAHs may be expressed as Benzo(a)pyrene equivalents by applying the BaP toxicity equivalence factor (NEPM 1999, June 2013, B7). These can be reported as the individual PAHs and as a sum of carcinogenic PAHs. The sum is reported three ways, the first assuming all <LOR results are zero, the second assuming all < LOR results are half the LOR and the third assuming all <LOR results are the LOR.
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN735	The Colilert matrix contains two nutrient indicators, ONPG (ortho-nitro-phenyl B-d- galactopyranoside) and MUG (4-methyl-umbelliferyl B-d-glucruonide). As coliforms grow, they use B-galactosidase to metabolise ONPG which causes yellow colouration of the matrix via the nitro-phenyl. E.coli possesses an additional enzyme, B-glucuronidase, which it uses to metabolise MUG and display florescence (caused by the 4 methyl-umbelliferyl). Incubation at 37°C.
AN735	Non target organisms are suppressed by a combination of high salts, detergents etc. present within the matrix. Faecal coliforms are thermotolerant, thus they can be enumerated by testing at 44.5°C.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

STATEMENT OF QA/QC PERFORMANCE

SE267737 R0

CLIENT DETAILS

Contact	Jacques Chiomey
Client	RAW EARTH ENVIRONMENTAL
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Project	**S00360 DSI Eileen O'Connor**
Order Number	**S00360**
Samples	3

LABORATORY DETAILS

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SGS Reference	**SE267737 R0**
Date Received	04 Jul 2024
Date Reported	11 Jul 2024

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	Anions by Ion Chromatography in Water	1 item
	E. coli, Total and Faecal (Thermotolerant) coliforms in Water	1 item
	Mercury (dissolved) in Water	1 item
	Nitrite in Water	1 item
	PAH (Polynuclear Aromatic Hydrocarbons) in Water	1 item
	pH in water	1 item
	TKN Kjeldahl Digestion by Discrete Analyser	1 item
	Total Phosphorus by Kjeldahl Digestion DA in Water	1 item
	TRH (Total Recoverable Hydrocarbons) in Water	1 item
	VOCs in Water	1 item
	Volatile Petroleum Hydrocarbons in Water	1 item
Analysis Date	Anions by Ion Chromatography in Water	1 item
	E. coli, Total and Faecal (Thermotolerant) coliforms in Water	1 item
	Mercury (dissolved) in Water	1 item

There are more than 15 quality objective exceedences. Please see report for details

SAMPLE SUMMARY

Sample counts by matrix	2 Soil, 1 Water	Type of documentation received	COC
Date documentation received	4/7/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	11.5°C
Sample container provider	Other Lab	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE267737 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317098	01 Jun 2024	04 Jul 2024	29 Jun 2024	08 Jul 2024†	29 Jun 2024	10 Jul 2024†

E. coli, Total and Faecal (Thermotolerant) coliforms in Water

Method: ME-(AU)-[ENV]AN735

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB316944	01 Jun 2024	04 Jul 2024	02 Jun 2024	05 Jul 2024†	08 Jul 2024	09 Jul 2024†

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB316931	01 Jun 2024	04 Jul 2024	29 Jun 2024	05 Jul 2024†	29 Jun 2024	05 Jul 2024†

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316969	01 Jul 2024	04 Jul 2024	29 Jul 2024	05 Jul 2024	29 Jul 2024	09 Jul 2024
QA2A	SE267737.003	LB316969	02 Jul 2024	04 Jul 2024	30 Jul 2024	05 Jul 2024	30 Jul 2024	09 Jul 2024

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316967	01 Jul 2024	04 Jul 2024	15 Jul 2024	05 Jul 2024	10 Jul 2024	08 Jul 2024
QA2A	SE267737.003	LB316967	02 Jul 2024	04 Jul 2024	16 Jul 2024	05 Jul 2024	10 Jul 2024	08 Jul 2024

Nitrite in Water

Method: ME-(AU)-[ENV]AN277

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB316964	01 Jun 2024	04 Jul 2024	05 Jun 2024	05 Jul 2024†	05 Jun 2024	10 Jul 2024†

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316963	01 Jul 2024	04 Jul 2024	15 Jul 2024	05 Jul 2024	14 Aug 2024	08 Jul 2024
QA2A	SE267737.003	LB316963	02 Jul 2024	04 Jul 2024	16 Jul 2024	05 Jul 2024	14 Aug 2024	08 Jul 2024

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317036	01 Jun 2024	04 Jul 2024	08 Jun 2024	08 Jul 2024†	17 Aug 2024	10 Jul 2024

pH in water

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB316868	01 Jun 2024	04 Jul 2024	02 Jun 2024	04 Jul 2024†	02 Jun 2024	04 Jul 2024†

TKN Kjeldahl Digestion by Discrete Analyser

Method: ME-(AU)-[ENV]AN292

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317096	01 Jun 2024	04 Jul 2024	29 Jun 2024	08 Jul 2024†	29 Jun 2024	10 Jul 2024†

Total Phosphorus by Kjeldahl Digestion DA in Water

Method: ME-(AU)-[ENV]AN279/AN293(Sydney only)

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317096	01 Jun 2024	04 Jul 2024	29 Jun 2024	08 Jul 2024†	29 Jun 2024	10 Jul 2024†

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316968	01 Jul 2024	04 Jul 2024	28 Dec 2024	05 Jul 2024	28 Dec 2024	09 Jul 2024
QA2A	SE267737.003	LB316968	02 Jul 2024	04 Jul 2024	29 Dec 2024	05 Jul 2024	29 Dec 2024	09 Jul 2024

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317031	01 Jun 2024	04 Jul 2024	28 Nov 2024	08 Jul 2024	28 Nov 2024	08 Jul 2024

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref

HOLDING TIME SUMMARY

SE267737 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316963	01 Jul 2024	04 Jul 2024	15 Jul 2024	05 Jul 2024	14 Aug 2024	08 Jul 2024
QA2A	SE267737.003	LB316963	02 Jul 2024	04 Jul 2024	16 Jul 2024	05 Jul 2024	14 Aug 2024	08 Jul 2024

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317036	01 Jun 2024	04 Jul 2024	08 Jun 2024	08 Jul 2024†	17 Aug 2024	10 Jul 2024

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316966	01 Jul 2024	04 Jul 2024	15 Jul 2024	05 Jul 2024	15 Jul 2024	08 Jul 2024
QA2A	SE267737.003	LB316966	02 Jul 2024	04 Jul 2024	16 Jul 2024	05 Jul 2024	16 Jul 2024	08 Jul 2024

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317116	01 Jun 2024	04 Jul 2024	15 Jun 2024	08 Jul 2024†	15 Jun 2024	09 Jul 2024†

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QA1A	SE267737.001	LB316966	01 Jul 2024	04 Jul 2024	15 Jul 2024	05 Jul 2024	15 Jul 2024	08 Jul 2024
QA2A	SE267737.003	LB316966	02 Jul 2024	04 Jul 2024	16 Jul 2024	05 Jul 2024	16 Jul 2024	08 Jul 2024

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
WQA1A	SE267737.002	LB317116	01 Jun 2024	04 Jul 2024	15 Jun 2024	08 Jul 2024†	15 Jun 2024	09 Jul 2024†

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	QA1A	SE267737.001	%	70 - 130%	96
	QA2A	SE267737.003	%	70 - 130%	101
d14-p-terphenyl (Surrogate)	QA1A	SE267737.001	%	70 - 130%	99
	QA2A	SE267737.003	%	70 - 130%	101
d5-nitrobenzene (Surrogate)	QA1A	SE267737.001	%	70 - 130%	96
	QA2A	SE267737.003	%	70 - 130%	103

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	60
d14-p-terphenyl (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	68
d5-nitrobenzene (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	61

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QA1A	SE267737.001	%	60 - 130%	95
	QA2A	SE267737.003	%	60 - 130%	99
d4-1,2-dichloroethane (Surrogate)	QA1A	SE267737.001	%	60 - 130%	98
	QA2A	SE267737.003	%	60 - 130%	108
d8-toluene (Surrogate)	QA1A	SE267737.001	%	60 - 130%	107
	QA2A	SE267737.003	%	60 - 130%	113

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	93
d4-1,2-dichloroethane (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	101
d8-toluene (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	81

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QA1A	SE267737.001	%	60 - 130%	95
	QA2A	SE267737.003	%	60 - 130%	99
d4-1,2-dichloroethane (Surrogate)	QA1A	SE267737.001	%	60 - 130%	98
	QA2A	SE267737.003	%	60 - 130%	108
d8-toluene (Surrogate)	QA1A	SE267737.001	%	60 - 130%	107
	QA2A	SE267737.003	%	60 - 130%	113

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	93
d4-1,2-dichloroethane (Surrogate)	WQA1A	SE267737.002	%	60 - 130%	101
d8-toluene (Surrogate)	WQA1A	SE267737.002	%	40 - 130%	81

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

Sample Number	Parameter	Units	LOR	Result
LB317098.001	Nitrate Nitrogen, NO3-N	mg/L	0.005	<0.005

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB316931.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB316969.001	Mercury	mg/kg	0.05	<0.05

Nitrite in Water

Method: ME-(AU)-[ENV]AN277

Sample Number	Parameter	Units	LOR	Result
LB316964.001	Nitrite Nitrogen, NO2 as N	mg/L	0.005	<0.005

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB316963.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	99
		2-fluorobiphenyl (Surrogate)	%	-	98
		d14-p-terphenyl (Surrogate)	%	-	103

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB317036.001	Naphthalene	µg/L	0.1	<0.1
	2-methylnaphthalene	µg/L	0.1	<0.1
	1-methylnaphthalene	µg/L	0.1	<0.1
	Acenaphthylene	µg/L	0.1	<0.1
	Acenaphthene	µg/L	0.1	<0.1
	Fluorene	µg/L	0.1	<0.1
	Phenanthrene	µg/L	0.1	<0.1
	Anthracene	µg/L	0.1	<0.1
	Fluoranthene	µg/L	0.1	<0.1
	Pyrene	µg/L	0.1	<0.1
	Benzo(a)anthracene	µg/L	0.1	<0.1
	Chrysene	µg/L	0.1	<0.1
	Benzo(a)pyrene	µg/L	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
	Dibenzo(ah)anthracene	µg/L	0.1	<0.1
	Benzo(ghi)perylene	µg/L	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Water (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB317036.001	Surrogates	d5-nitrobenzene (Surrogate)	%	-	72
		2-fluorobiphenyl (Surrogate)	%	-	76
		d14-p-terphenyl (Surrogate)	%	-	84

Total Phosphorus by Kjeldahl Digestion DA in Water

Method: ME-(AU)-[ENV]AN279/AN293(Sydney only)

Sample Number	Parameter	Units	LOR	Result
LB317096.001	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	<0.02

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB316968.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB317031.001	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1
	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB316963.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB317036.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB316966.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	119
		d8-toluene (Surrogate)	%	-	126
		Bromofluorobenzene (Surrogate)	%	-	107
	Totals	Total BTEX*	mg/kg	0.6	<0.6

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB317116.001	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB317116.001	Monocyclic Aromatic	o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene (VOC)*	µg/L	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	98
		d8-toluene (Surrogate)	%	-	84
		Bromofluorobenzene (Surrogate)	%	-	91

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB316966.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	119

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB317116.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	98
		d8-toluene (Surrogate)	%	-	84
		Bromofluorobenzene (Surrogate)	%	-	91

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267707.001	LB317098.014	Nitrate Nitrogen, NO3-N	mg/L	0.005	0.88	0.85	16	4

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267703.001	LB316931.014	Mercury	µg/L	0.0001	<0.0001	<0.0001	140	0

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316969.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE267737.003	LB316969.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316967.011	% Moisture	%w/w	1	14.5	10.5	38	32
SE267737.003	LB316967.021	% Moisture	%w/w	1	14.7	15.3	37	4

Nitrite in Water

Method: ME-(AU)-[ENV]AN277

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267756.001	LB316964.014	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.17	0.17	18	1
SE267764.007	LB316964.024	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.019	0.018	42	4

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316963.014		Naphthalene	mg/kg	0.1	0.1	0.1	113	32
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	0.4	0.4	54	10
			Acenaphthene	mg/kg	0.1	0.3	0.2	71	43
			Fluorene	mg/kg	0.1	0.4	0.2	65	43
			Phenanthrene	mg/kg	0.1	4.9	4.0	32	19
			Anthracene	mg/kg	0.1	1.6	1.3	37	21
			Fluoranthene	mg/kg	0.1	11	11	31	0
			Pyrene	mg/kg	0.1	12	10	31	15
			Benzo(a)anthracene	mg/kg	0.1	4.7	4.0	32	15
			Chrysene	mg/kg	0.1	4.7	4.1	32	12
			Benzo(b&j)fluoranthene	mg/kg	0.1	6.5	5.7	32	14
			Benzo(k)fluoranthene	mg/kg	0.1	2.4	2.2	34	10
			Benzo(a)pyrene	mg/kg	0.1	5.8	5.1	32	13
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	4.2	3.7	33	13
			Dibenzo(ah)anthracene	mg/kg	0.1	0.7	0.6	46	12
			Benzo(ghi)perylene	mg/kg	0.1	4.7	4.1	32	15
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	8.4	7.3	13	13
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	8.4	7.3	13	13
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	8.4	7.3	14	13
			Total PAH (18)	mg/kg	0.8	64	57	30	12
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	0
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE267737.003	LB316963.023		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267737.003	LB316963.023		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	5

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267734.004	LB317036.028		Naphthalene	µg/L	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
			Acenaphthylene	µg/L	0.1	<0.1	<0.1	200	0
			Acenaphthene	µg/L	0.1	<0.1	<0.1	200	0
			Fluorene	µg/L	0.1	<0.1	<0.1	200	0
			Phenanthrene	µg/L	0.1	<0.1	<0.1	200	0
			Anthracene	µg/L	0.1	<0.1	<0.1	200	0
			Fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
			Pyrene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	200	0
			Chrysene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.4	0.4	30	1
			2-fluorobiphenyl (Surrogate)	µg/L	-	0.4	0.4	30	4
			d14-p-terphenyl (Surrogate)	µg/L	-	0.4	0.4	30	1

pH in water

Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267741.001	LB316868.008	pH**	pH Units	-	6.8	6.8	16	0

TKN Kjeldahl Digestion by Discrete Analyser

Method: ME-(AU)-[ENV]AN292

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267652.001	LB317096.028	Total Kjeldahl Nitrogen	mg/L	0.05	90	80	15	12
SE267710.002	LB317096.014	Total Kjeldahl Nitrogen	mg/L	0.05	0.58	0.59	24	1

Total Phosphorus by Kjeldahl Digestion DA in Water

Method: ME-(AU)-[ENV]AN279/AN293(Sydney only)

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267652.001	LB317096.028	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	12	13	15	8
SE267710.002	LB317096.014	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	0.16	0.17	27	7

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316968.014	Arsenic, As	mg/kg	1	5	4	52	2
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	12	26	33	72 ②
		Copper, Cu	mg/kg	0.5	19	20	33	4
		Nickel, Ni	mg/kg	0.5	5.4	5.5	39	1
		Lead, Pb	mg/kg	1	23	21	35	11
		Zinc, Zn	mg/kg	2	38	44	35	15
SE267737.003	LB316968.024	Arsenic, As	mg/kg	1	<1	<1	200	0
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	0.6	0.6	111	2
		Copper, Cu	mg/kg	0.5	<0.5	<0.5	200	0
		Nickel, Ni	mg/kg	0.5	<0.5	<0.5	200	0
		Lead, Pb	mg/kg	1	1	1	118	17
		Zinc, Zn	mg/kg	2	<2.0	<2.0	200	0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267686.001	LB317031.014	Arsenic	µg/L	1	<1	<1	200	0
		Cadmium	µg/L	0.1	<0.1	<0.1	170	0
		Chromium	µg/L	1	<1	<1	200	0
		Copper	µg/L	1	16	17	21	1
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	25	25	19	1
		Zinc	µg/L	5	8	7	82	20
SE267737.002	LB317031.023	Arsenic	µg/L	1	<1	<1	200	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	1	<1	124	5
		Copper	µg/L	1	3	3	49	3
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	3	3	47	2
		Zinc	µg/L	5	64	64	23	1

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316963.014		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	440	180	45	82 ②
			TRH C29-C36	mg/kg	45	140	96	68	39
			TRH C37-C40	mg/kg	100	<100	<100	192	0
			TRH C10-C36 Total	mg/kg	110	580	280	56	70 ②
			TRH >C10-C40 Total (F bands)	mg/kg	210	650	250	77	90 ②
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	530	250	53	72 ②
			TRH >C34-C40 (F4)	mg/kg	120	130	<120	149	6
SE267737.003	LB316963.023		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267734.004	LB317036.028	TRH C10-C14	µg/L	50	<50	<50	136	0
		TRH C15-C28	µg/L	200	210	210	124	3
		TRH C29-C36	µg/L	200	<200	<200	200	0
		TRH C37-C40	µg/L	200	<200	<200	200	0
		TRH C10-C40	µg/L	320	<320	340	128	6

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

TRH (Total Recoverable Hydrocarbons) in Water (continued)

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267734.004	LB317036.028	TRH F Bands	TRH >C10-C16	µg/L	60	74	73	112	1
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	74	73	112	1
			TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0
			TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316966.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	0.1	<0.1	143	6
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.1	7.9	50	14
			d8-toluene (Surrogate)	mg/kg	-	9.5	9.1	50	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	8.6	50	6
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE267737.003	LB316966.023	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.8	10.3	50	5
			d8-toluene (Surrogate)	mg/kg	-	11.3	10.5	50	8
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.9	9.3	50	7
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267650.001	LB317116.023	Monocyclic	Benzene	µg/L	0.5	0.012715648	30.055577462	3 200	0
		Aromatic	Toluene	µg/L	0.5	0.014301986	10.028670432	4 200	0
			Ethylbenzene	µg/L	0.5	0.003830779	70.018166348	7 200	0
			m/p-xylene	µg/L	1	0.009595926	40.036356052	0 200	0
			o-xylene	µg/L	0.5	0.003789434	70.017849754	9 200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	0.115785760	7 0	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11.30520325	310.096822901	7 30	11
			d8-toluene (Surrogate)	µg/L	-	8.389408357	38.825469083	6 30	5
			Bromofluorobenzene (Surrogate)	µg/L	-	9.164666887	97.309169973	3 30	23
		Totals	Total BTEX	µg/L	3	0	0	200	0
SE267794.001	LB317116.024	Monocyclic	Benzene	µg/L	0.5	0.013138787	7 0	200	0
		Aromatic	Toluene	µg/L	0.5	0.011912545	70.016193299	2 200	0
			Ethylbenzene	µg/L	0.5	0.003803063	40.009711947	0 200	0
			m/p-xylene	µg/L	1	0.010740760	10.020112127	7 200	0
			o-xylene	µg/L	0.5	0.009622515	90.010631637	5 200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	0.114062493	6 0	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.18072991	659.931321444	1 30	2
			d8-toluene (Surrogate)	µg/L	-	8.284995193	69.815047258	6 30	17
			Bromofluorobenzene (Surrogate)	µg/L	-	9.433627446	68.146445271	1 30	15
		Totals	Total BTEX	µg/L	3	0	0	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267698.004	LB316966.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.1	7.9	50	14
			d8-toluene (Surrogate)	mg/kg	-	9.5	9.1	50	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	8.6	50	6
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267737.003	LB316966.023		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.8	10.3	50	5
			d8-toluene (Surrogate)	mg/kg	-	11.3	10.5	50	8
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.9	9.3	50	7
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE267650.001	LB317116.023		TRH C6-C10	µg/L	50	<50	<50	200	0
			TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11.3	10.1	30	11
			d8-toluene (Surrogate)	µg/L	-	8.4	8.8	30	5
			Bromofluorobenzene (Surrogate)	µg/L	-	9.2	7.3	30	23
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	200	0
SE267794.001	LB317116.024		TRH C6-C10	µg/L	50	<50	<50	200	0
			TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.2	9.9	30	2
			d8-toluene (Surrogate)	µg/L	-	8.3	9.8	30	17
			Bromofluorobenzene (Surrogate)	µg/L	-	9.4	8.1	30	15
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Anions by Ion Chromatography in Water

Method: ME-(AU)-[ENV]AN245

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317098.002	Nitrate Nitrogen, NO3-N	mg/L	0.005	1.9	2	80 - 120	96

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316969.002	Mercury	mg/kg	0.05	0.19	0.2	80 - 120	95

Nitrite in Water

Method: ME-(AU)-[ENV]AN277

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316964.002	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.11	0.1	80 - 120	113

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316963.002		Naphthalene	mg/kg	0.1	4.7	4	60 - 140	118
		Acenaphthylene	mg/kg	0.1	4.9	4	60 - 140	122
		Acenaphthene	mg/kg	0.1	4.7	4	60 - 140	117
		Phenanthrene	mg/kg	0.1	4.9	4	60 - 140	122
		Anthracene	mg/kg	0.1	5.3	4	60 - 140	131
		Fluoranthene	mg/kg	0.1	4.6	4	60 - 140	115
		Pyrene	mg/kg	0.1	5.2	4	60 - 140	131
		Benzo(a)pyrene	mg/kg	0.1	5.6	4	60 - 140	139
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	99
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	107

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317036.002		Naphthalene	µg/L	0.1	30	40	60 - 140	74
		Acenaphthylene	µg/L	0.1	33	40	60 - 140	82
		Acenaphthene	µg/L	0.1	31	40	60 - 140	77
		Phenanthrene	µg/L	0.1	30	40	60 - 140	75
		Anthracene	µg/L	0.1	30	40	60 - 140	74
		Fluoranthene	µg/L	0.1	29	40	60 - 140	73
		Pyrene	µg/L	0.1	26	40	60 - 140	66
		Benzo(a)pyrene	µg/L	0.1	35	40	60 - 140	87
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.3	0.5	40 - 130	56
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.4	0.5	40 - 130	80
		d14-p-terphenyl (Surrogate)	µg/L	-	0.3	0.5	40 - 130	64

pH in water

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316868.003	pH**	No unit	-	7.4	7.415	98 - 102	100

Total Phosphorus by Kjeldahl Digestion DA in Water

Method: ME-(AU)-[ENV]AN279/AN293(Sydney only)

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317096.002	Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	1.2	1	80 - 120	118

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316968.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	104
	Cadmium, Cd	mg/kg	0.3	4.6	4.81	70 - 130	95
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	107
	Copper, Cu	mg/kg	0.5	290	290	80 - 120	100
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	99
	Lead, Pb	mg/kg	1	89	89.9	80 - 120	99

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316968.002	Zinc, Zn	mg/kg	2	270	273	80 - 120	97

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317031.002	Arsenic	µg/L	1	20	20	80 - 120	100
	Cadmium	µg/L	0.1	21	20	80 - 120	104
	Chromium	µg/L	1	22	20	80 - 120	109
	Copper	µg/L	1	22	20	80 - 120	109
	Lead	µg/L	1	20	20	80 - 120	102
	Nickel	µg/L	1	21	20	80 - 120	106
	Zinc	µg/L	5	23	20	80 - 120	115

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316963.002		TRH C10-C14	mg/kg	20	54	40	60 - 140	136
		TRH C15-C28	mg/kg	45	55	40	60 - 140	138
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	91
	TRH F Bands	TRH >C10-C16	mg/kg	25	55	40	60 - 140	138
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	119
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	85

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317036.002		TRH C10-C14	µg/L	50	1200	1200	60 - 140	101
		TRH C15-C28	µg/L	200	1400	1200	60 - 140	121
		TRH C29-C36	µg/L	200	1500	1200	60 - 140	121
	TRH F Bands	TRH >C10-C16	µg/L	60	1400	1200	60 - 140	113
		TRH >C16-C34 (F3)	µg/L	500	1500	1200	60 - 140	122
		TRH >C34-C40 (F4)	µg/L	500	740	600	60 - 140	123

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316966.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.1	5	60 - 140	83
		Toluene	mg/kg	0.1	5.9	5	60 - 140	118
		Ethylbenzene	mg/kg	0.1	4.9	5	60 - 140	97
		m/p-xylene	mg/kg	0.2	10	10	60 - 140	102
		o-xylene	mg/kg	0.1	5.1	5	60 - 140	102
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.8	10	70 - 130	108
		d8-toluene (Surrogate)	mg/kg	-	11.7	10	70 - 130	117
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.3	10	70 - 130	93

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317116.002	Monocyclic Aromatic	Benzene	µg/L	0.5	57	45.45	60 - 140	126
		Toluene	µg/L	0.5	51	45.45	60 - 140	112
		Ethylbenzene	µg/L	0.5	57	45.45	60 - 140	125
		m/p-xylene	µg/L	1	120	90.9	60 - 140	137
		o-xylene	µg/L	0.5	63	45.45	60 - 140	138
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.5	10	60 - 140	85
		d8-toluene (Surrogate)	µg/L	-	8.2	10	70 - 130	82
		Bromofluorobenzene (Surrogate)	µg/L	-	9.8	10	70 - 130	98

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB316966.002		TRH C6-C10	mg/kg	25	77	92.5	60 - 140	83
		TRH C6-C9	mg/kg	20	67	80	60 - 140	83
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.8	10	70 - 130	108
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.3	10	70 - 130	93
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	46	62.5	60 - 140	74

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Volatile Petroleum Hydrocarbons in Water (continued) — **Method: ME-(AU)-[ENV]AN433**

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB317116.002		TRH C6-C10	µg/L	50	860	946.63	60 - 140	91
		TRH C6-C9	µg/L	40	730	818.71	60 - 140	89
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.5	10	60 - 140	85
		d8-toluene (Surrogate)	µg/L	-	8.2	10	70 - 130	82
		Bromofluorobenzene (Surrogate)	µg/L	-	9.8	10	70 - 130	98
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	510	639.67	60 - 140	79

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267425A.001	LB316931.004	Mercury	mg/L	0.0001	0.0023	<0.0001	0.008	118

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267760.001	LB316969.004	Mercury	mg/kg	0.05	0.26	0.11	0.2	79

Nitrite in Water

Method: ME-(AU)-[ENV]AN277

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267709.001	LB316964.004	Nitrite Nitrogen, NO2 as N	mg/L	0.005	0.086	<0.005	0.1	87

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267760.001	LB316963.004		Naphthalene	mg/kg	0.1	4.6	<0.1	4	115
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	4.9	<0.1	4	121
			Acenaphthene	mg/kg	0.1	4.7	<0.1	4	117
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	4.9	<0.1	4	122
			Anthracene	mg/kg	0.1	5.2	<0.1	4	130
			Fluoranthene	mg/kg	0.1	4.6	<0.1	4	113
			Pyrene	mg/kg	0.1	5.0	<0.1	4	124
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	5.5	<0.1	4	137
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	5.5	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	5.6	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	5.7	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	39	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	94
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	99
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	103

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267760.001	LB316968.004	Arsenic, As	mg/kg	1	55	11	50	87
		Cadmium, Cd	mg/kg	0.3	44	1.1	50	87
		Chromium, Cr	mg/kg	0.5	71	35	50	73
		Copper, Cu	mg/kg	0.5	100	64	50	73
		Nickel, Ni	mg/kg	0.5	51	6.9	50	89
		Lead, Pb	mg/kg	1	240	230	50	5 ④
		Zinc, Zn	mg/kg	2	200	180	50	57 ④

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267645.001	LB317031.004	Arsenic	µg/L	1	22	<1	20	108
		Cadmium	µg/L	0.1	20	<0.1	20	101
		Copper	µg/L	1	20	<1	20	98
		Lead	µg/L	1	20	<1	20	100
		Nickel	µg/L	1	20	<1	20	96
		Zinc	µg/L	5	30	8	20	110

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267760.001	LB316963.004		TRH C10-C14	mg/kg	20	51	<20	40	119
			TRH C15-C28	mg/kg	45	55	<45	40	117
			TRH C29-C36	mg/kg	45	<45	<45	40	75
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	52	<25	40	121
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	52	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	93
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267760.001	LB316966.004	Monocyclic	Benzene	mg/kg	0.1	4.2	<0.1	5	84
		Aromatic	Toluene	mg/kg	0.1	6.3	<0.1	5	127
			Ethylbenzene	mg/kg	0.1	5.3	<0.1	5	106
			m/p-xylene	mg/kg	0.2	12	<0.2	10	119
			o-xylene	mg/kg	0.1	6.0	<0.1	5	119
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.3	10.7	10	93
			d8-toluene (Surrogate)	mg/kg	-	9.7	10.1	10	97
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.1	8.9	10	81
		Totals	Total BTEX*	mg/kg	0.6	34	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	18	<0.3	-	-

VOCs in Water

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE267649.001	LB317116.022	Monocyclic	Benzene	µg/L	0.5	0.01262657330	45.45	108
		Aromatic	Toluene	µg/L	0.5	0.00995740420	45.45	107
			Ethylbenzene	µg/L	0.5	0.00442951060	45.45	106
			m/p-xylene	µg/L	1	0.01311410169	90.9	105
			o-xylene	µg/L	0.5	0.00523152792	45.45	103
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	0.12118071301	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.5246131907	-	92
			d8-toluene (Surrogate)	µg/L	-	8.20097877352	-	93
			Bromofluorobenzene (Surrogate)	µg/L	-	9.24957541035	-	104
		Totals	Total BTEX	µg/L	3	0	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE267760.001	LB316966.004		TRH C6-C10	mg/kg	25	120	<25	92.5	129
			TRH C6-C9	mg/kg	20	100	<20	80	130
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.3	10.7	10	93
			d8-toluene (Surrogate)	mg/kg	-	9.7	10.1	10	97
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.1	8.9	-	81
		VPH F	Benzene (F0)	mg/kg	0.1	4.2	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	87	<25	62.5	138

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE267649.001	LB317116.022		TRH C6-C10	µg/L	50	0	946.63	84
			TRH C6-C9	µg/L	40	0	818.71	87
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.5246131907	-	92
			d8-toluene (Surrogate)	µg/L	-	8.20097877352	-	93
			Bromofluorobenzene (Surrogate)	µg/L	-	9.24957541035	-	104
		VPH F	Benzene (F0)	µg/L	0.5	0.01262657330	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	0	639.67	79

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: https://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

APPENDIX E: ENM ORDER 2014 & ENM EXEMPTION 2014

Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014

The excavated natural material order 2014

Introduction

This order, issued by the Environment Protection Authority (EPA) under clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), imposes the requirements that must be met by suppliers of excavated natural material to which 'the excavated natural material exemption 2014' applies. The requirements in this order apply in relation to the supply of excavated natural material for application to land as engineering fill or for use in earthworks.

1. Waste to which this order applies

1.1. This order applies to excavated natural material. In this order, excavated natural material means naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:

a) been excavated from the ground, and
b) contains at least 98% (by weight) natural material, and
c) does not meet the definition of Virgin Excavated Natural Material in the Act.

Excavated natural material does not include material located in a hotspot; that has been processed; or that contains asbestos, Acid Sulfate Soils (ASS), Potential Acid Sulfate soils (PASS) or sulfidic ores.

2. Persons to whom this order applies

2.1. The requirements in this order apply, as relevant, to any person who supplies excavated natural material, that has been generated, processed or recovered by the person.

2.2. This order does not apply to the supply of excavated natural material to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

3. Duration

3.1. This order commences on 24 November 2014 and is valid until revoked by the EPA by notice published in the Government Gazette.

4. Generator requirements

The EPA imposes the following requirements on any generator who supplies excavated natural material.

Sampling requirements

4.1. On or before supplying excavated natural material, the generator must:

4.1.1. Prepare a written sampling plan which includes a description of sample preparation and storage procedures for the excavated natural material.

4.1.2. Undertake sampling and testing of the excavated natural material as required under clauses 4.2, 4.3, and 4.4 below. The sampling must be carried out in accordance with the written sampling plan.

4.2. The generator must undertake sampling and analysis of the material for ASS and PASS, in accordance with the NSW Acid Sulfate Soil Manual, Acid Sulfate Soils Management Advisory Council, 1998 and the updated Laboratory Methods Guidelines version 2.1 – June 2004 where:

4.2.1. the pH measured in the material is below 5, and/or

4.2.2. the review of the applicable Acid Sulfate Soil Risk Maps (published by the former Department of Land and Water Conservation and available at http://www.environment.nsw.gov.au/acidsulfatesoil/riskmaps.htm) indicates the potential presence of ASS.

4.3. For stockpiled material, the generator must:

4.3.1. undertake sampling in accordance with Australian Standard 1141.3.1-2012 Methods for sampling and testing aggregates – Sampling – Aggregates (or equivalent);

4.3.2. undertake characterisation sampling by collecting the number of samples listed in Column 2 of Table 1 with respect to the quantity of the waste listed in Column 1 of Table 1 and testing each sample for the chemicals and other attributes listed in Column 1 of Table 4. For the purposes of characterisation sampling the generator must collect:

4.3.2.1. composite samples for attributes 1 to 10 and 18 in Column 1 of Table 4.

4.3.2.2. discrete samples for attributes 11 to 17 in Column 1 of Table 4.

4.3.2.3. The generator must carry out sampling in a way that ensures that the samples taken are representative of the material from the entire stockpile. All parts of the stockpile must be equally accessible for sampling.

4.3.2.4. for stockpiles greater than 4,000 tonnes the number of samples described in Table 1 must be repeated.

4.3.3. store the excavated natural material appropriately until the characterisation test results are validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 4 and the absolute maximum concentration or other value listed in Column 3 of Table 4.

Table 1

Sampling of Stockpiled Material		
Column 1	**Column 2**	**Column 3**
Quantity (tonnes)	**Number of samples**	**Validation**
<500	3	Required
500 – 1,000	4	
1,000 – 2,000	5	
2,000 – 3,000	7	
3,000 – 4,000	10	

4.4. For in situ material, the generator must:

4.4.1. undertake sampling by collecting discrete samples. Compositing of samples is not permitted for in-situ materials.

4.4.2. undertake characterisation sampling for the range of chemicals and other attributes listed in Column 1 of Table 4 according to the requirements listed in Columns 1, 2 and 3 of Table 2. When the ground surface is not comprised of soil (e.g. concrete slab), samples must be taken at the depth at which the soil commences.

4.4.3. undertake sampling at depth according to Column 1 of Table 3.

4.4.4. collect additional soil samples (and analyse them for the range of chemicals and other attributes listed in Column 1 of Table 4), at any depth exhibiting discolouration, staining, odour or other indicators of contamination inconsistent with soil samples collected at the depth intervals indicated in Table 3.

4.4.5. segregate and exclude hotspots identified in accordance with Table 2, from material excavated for reuse.

4.4.6. subdivide sites larger than 50,000 m² into smaller areas and sample each area as per Table 2.

4.4.7. store the excavated natural material appropriately until the characterisation test results are validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 4 and the absolute maximum concentration or other value listed in Column 3 of Table 4.

Table 2

***In Situ* Sampling at surface**				
Column 1	**Column 2**	**Column 3**	**Column 4**	**Column 5**
Size of *in situ* area (m^2)	**Number of systematic sampling points recommended**	**Distance between two sampling points** (m)	**Diameter of the hot spot that can be detected with 95% confidence** (m)	**Validation**
500	5	10.0	11.8	Required
1000	6	12.9	15.2	
2000	7	16.9	19.9	
3000	9	18.2	21.5	
4000	11	19.1	22.5	
5000	13	19.6	23.1	
6000	15	20.0	23.6	
7000	17	20.3	23.9	
8000	19	20.5	24.2	
9000	20	21.2	25.0	
10,000	21	21.8	25.7	
15,000	25	25.0	28.9	
20,000	30	25.8	30.5	
25,000	35	26.7	31.5	
30,000	40	27.5	32.4	
35,000	45	27.9	32.9	
40,000	50	28.3	33.4	
45,000	52	29.3	34.6	
50,000	55	30.2	35.6	

Table 2 has been taken from NSW EPA 1995, *Contaminated Sites Sampling Design Guidelines*, NSW Environment Protection Authority.

Table 3

***In Situ* Sampling at Depth**	
Column 1	**Column 2**
Sampling Requirements *	**Validation**
1 soil sample at 1.0 m bgl from each surface sampling point followed by 1 soil sample for every metre thereafter. From 1.0 m bgl, sample at the next metre interval until the proposed depth of excavation of the material is reached. If the proposed depth of excavation is between 0.5 to 0.9 m after the last metre interval, sample at the base of the proposed depth of excavation.	Required if the depth of excavation is equal to or greater than 1.0 m bgl

* Refer to Notes for examples

Chemical and other material requirements

4.5. The generator must not supply excavated natural material waste to any person if, in relation to any of the chemical and other attributes of the excavated natural material:

4.5.1. The chemical concentration or other attribute of any sample collected and tested as part of the characterisation of the excavated natural material exceeds the absolute maximum concentration or other value listed in Column 3 of Table 4:

4.5.2. The average concentration or other value of that attribute from the characterisation of the excavated natural material (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 4.

4.6. The absolute maximum concentration or other value of that attribute in any excavated natural material supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 3 of Table 4.

Table 4

Column 1	Column 2	Column 3
Chemicals and other attributes	**Maximum average concentration for characterisation** (mg/kg 'dry weight' unless otherwise specified)	**Absolute maximum concentration** (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	0.5	1
2. Cadmium	0.5	1
3. Lead	50	100
4. Arsenic	20	40
5. Chromium (total)	75	150
6. Copper	100	200
7. Nickel	30	60
8. Zinc	150	300
9. Electrical Conductivity	1.5 dS/m	3 dS/m
10. pH *	5 to 9	4.5 to 10
11. Total Polycyclic Aromatic Hydrocarbons (PAHs)	20	40
12. Benzo(a)pyrene	0.5	1
13. Benzene	NA	0.5
14. Toluene	NA	65
15. Ethyl-benzene	NA	25
16. Xylene	NA	15
17. Total Petroleum Hydrocarbons C_{10}-C_{36}	250	500
18. Rubber, plastic, bitumen, paper, cloth, paint and wood	0.05%	0.10%

* The ranges given for pH are for the minimum and maximum acceptable pH values in the excavated natural material.

Test methods

4.7. The generator must ensure that any testing of samples required by this order is undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent.

4.8. The generator must ensure that the chemicals and other attributes (listed in Column 1 of Table 4) in the excavated natural material it supplies are tested in accordance with the test methods specified below or other equivalent analytical methods. Where an equivalent analytical method is used the detection limit must be equal to or less than that nominated for the given method below.

4.8.1. Test methods for measuring the mercury concentration.

4.8.1.1. Analysis using USEPA SW-846 Method 7471B Mercury in solid or semisolid waste (manual cold vapour technique), or an equivalent analytical method with a detection limit < 20% of the stated absolute maximum concentration in Column 3 of Table 2 (i.e. < 0.20 mg/kg dry weight).

4.8.1.2. Report as mg/kg dry weight.

4.8.2. Test methods for measuring chemicals 2 to 8.

4.8.2.1. Sample preparation by digesting using USEPA SW-846 Method 3051A Microwave assisted acid digestion of sediments, sludges, soils, and oils (or an equivalent analytical method).

4.8.2.2. Analysis using USEPA SW-846 Method 6010C Inductively coupled plasma - atomic emission spectrometry, or an equivalent analytical method with a detection limit < 10% of the stated absolute maximum concentration in Column 3 of Table 2, (e.g. 10 mg/kg dry weight for lead).

4.8.2.3. Report as mg/kg dry weight.

4.8.3. Test methods for measuring electrical conductivity and pH.

4.8.3.1. Sample preparation by mixing 1 part excavated natural material with 5 parts distilled water.

4.8.3.2. Analysis using Method 103 (pH) and 104 (Electrical Conductivity) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).

4.8.3.3. Report electrical conductivity in deciSiemens per metre (dS/m).

4.8.4. Test method for measuring Polynuclear Aromatic Hydrocarbons (PAHs) and benzo(a)pyrene.

4.8.4.1. Analysis using USEPA SW-846 Method 8100 Polynuclear Aromatic Hydrocarbons (or an equivalent analytical method).

4.8.4.2. Calculate the sum of all 16 PAHs for total PAHs.

4.8.4.3. Report total PAHs as mg/kg dry weight.

4.8.4.4. Report benzo(a)pyrene as mg/kg.

4.8.5. Test method for measuring benzene, toluene, ethylbenzene and xylenes (BTEX).

4.8.5.1. Method 501 (Volatile Alkanes and Monocyclic Aromatic Hydrocarbons) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).

4.8.5.2. Report BTEX as mg/kg.

4.8.6. Test method for measuring Total Petroleum Hydrocarbons (TPH).

4.8.6.1. Method 506 (Petroleum Hydrocarbons) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).

4.8.6.2. Report as mg/kg dry weight.

4.8.7. Test method for measuring rubber, plastic, bitumen, paper, cloth, paint and wood.

4.8.7.1. NSW Roads & Traffic Authority Test Method T276 Foreign Materials Content of Recycled Crushed Concrete (or an equivalent method).

4.8.7.2. Report as percent.

Notification

4.9. On or before each transaction, the generator must provide the following to each person to whom the generator supplies the excavated natural material:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of the excavated natural material exemption, or a link to the EPA website where the excavated natural material exemption can be found; and
- a copy of the excavated natural material order, or a link to the EPA website where the excavated natural material order can be found.

Record keeping and reporting

4.10. The generator must keep a written record of the following for a period of six years:

- the sampling plan required to be prepared under clause 4.1.1;
- all characterisation sampling results in relation to the excavated natural material supplied;
- the volume of detected hotspot material and the location;
- the quantity of the excavated natural material supplied; and
- the name and address of each person to whom the generator supplied the excavated natural material.

4.11. The generator must provide, on request, the characterisation and sampling results for that excavated natural material supplied to the consumer of the excavated natural material.

5. Definitions

In this order:

application or apply to land means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

Bgl means below ground level, referring to soil at depth beneath the ground surface.

composite sample means a sample that combines five discrete sub-samples of equal size into a single sample for the purpose of analysis.

consumer means a person who applies, or intends to apply excavated natural material to land.

discrete sample means a sample collected and analysed individually that will not be composited.

generator means a person who generates excavated natural material for supply to a consumer.

hotspot means a cylindrical volume which extends through the soil profile from the ground surface to the proposed depth of excavation, where the level of any contaminant listed in Column 1 of Table 2 is greater than the absolute maximum concentration in Column 3 of Table 2.

***in situ* material** means material that exists on or below the ground level. It does not include stockpiled material.

***in situ* sampling** means sampling undertaken on *in situ* material.

N/A means not applicable.

stockpiled material means material that has been excavated from the ground and temporarily stored on the ground prior to use.

systematic sampling means sampling at points that are selected at even intervals and are statistically unbiased.

transaction means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of excavated natural material that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of excavated natural material, the first supply of excavated natural material as required under the arrangement.

Manager Waste Strategy and Innovation

Environment Protection Authority

(by delegation)

Notes

The EPA may amend or revoke this order at any time. It is the responsibility of each of the generator and processor to ensure it complies with all relevant requirements of the most current order. The current version of this order will be available on ' www.epa.nsw.gov.au

In gazetting or otherwise issuing this order, the EPA is not in any way endorsing the supply or use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this order are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this order nor the accompanying exemption guarantee that the environment, human health or agriculture will not be harmed.

Any person or entity which supplies excavated natural material should assess whether the material is fit for the purpose the material is proposed to be used for, and whether this use may cause harm. The supplier may need to seek expert engineering or technical advice.

Regardless of any exemption or order provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The supply of excavated natural material remains subject to other relevant environmental regulations in the POEO Act and Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of this order, is guilty of an offence and subject to prosecution.

This order does not alter the requirements of any other relevant legislation that must be met in supplying this material, including for example, the need to prepare a Safety Data Sheet. Failure to comply with the conditions of this order constitutes an offence under clause 93 of the Waste Regulation.

Examples

In situ sampling at depth

Example 1.

If the proposed depth of ENM excavation is between 1 m bgl and 1.4 m bgl, then:

- 1 sample on surface (as per the requirements of Table 2).
- 1 sample at 1 m bgl.
- No further depth sampling after 1 m bgl, unless required under section 4.4.4.

Example 2.

If the proposed depth of ENM excavation is at 1.75 m bgl, then:

- 1 sample on surface (as per the requirements of Table 2).
- 1 sample at 1 m bgl.
- 1 sample at 1.75 m bgl.
- No further depth sampling after 1.75 m bgl, unless required under section 4.4.4.

Example 3.

If the proposed depth of ENM excavation is at 2.25 m bgl, then:

- 1 sample on surface (as per the requirements of Table 2).
- 1 sample at 1 m bgl.
- 1 sample at 2 m bgl.
- No further depth sampling after 2 m bgl, unless required under section 4.4.4.

Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014

The excavated natural material exemption 2014

Introduction

This exemption:

- is issued by the Environment Protection Authority (EPA) under clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation); and
- exempts a consumer of excavated natural material from certain requirements under the *Protection of the Environment Operations Act 1997* (POEO Act) and the Waste Regulation in relation to the application of that waste to land, provided the consumer complies with the conditions of this exemption.

This exemption should be read in conjunction with 'the excavated natural material order 2014'.

1. Waste to which this exemption applies

1.1. This exemption applies to excavated natural material that is, or is intended to be, applied to land as engineering fill or for use in earthworks.

1.2. Excavated natural material is naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:

a) been excavated from the ground, and
b) contains at least 98% (by weight) natural material, and
c) does not meet the definition of Virgin Excavated Natural Material in the Act.

Excavated natural material does not include material located in a hotspot; that has been processed; or that contains asbestos, Acid Sulfate Soils (ASS), Potential Acid Sulfate soils (PASS) or sulfidic ores.

2. Persons to whom this exemption applies

2.1. This exemption applies to any person who applies or intends to apply excavated natural material to land as set out in 1.1.

3. Duration

3.1. This exemption commences on 24 November 2014 and is valid until revoked by the EPA by notice published in the Government Gazette.

4. Premises to which this exemption applies

4.1. This exemption applies to the premises at which the consumer's actual or intended application of excavated natural material is carried out.

5. Revocation

5.1. 'The excavated natural material exemption 2012' which commenced 19 October 2012 is revoked from 24 November 2014.

6. Exemption

6.1. Subject to the conditions of this exemption, the EPA exempts each consumer from the following provisions of the POEO Act and the Waste Regulation in relation to the consumer's actual or intended application of excavated natural material to land as engineering fill or for use in earthworks at the premises:

- section 48 of the POEO Act in respect of the scheduled activities described in clauses 39 of Schedule 1 of the POEO Act;
- Part 4 of the Waste Regulation;
- section 88 of the POEO Act; and
- clause 109 and 110 of the Waste Regulation.

6.2. The exemption does not apply in circumstances where excavated natural material is received at the premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land) or clause 40 'waste disposal' (thermal treatment) of Schedule 1 of the POEO Act.

7. Conditions of exemption

The exemption is subject to the following conditions:

7.1. At the time the excavated natural material is received at the premises, the material must meet all chemical and other material requirements for excavated natural material which are required on or before the supply of excavated natural material under 'the excavated natural material order 2014'.

7.2. The excavated natural material can only be applied to land as engineering fill or for use in earthworks.

7.3. The consumer must keep a written record of the following for a period of six years:

- the quantity of any excavated natural material received; and
- the name and address of the supplier of the excavated natural material received.

7.4. The consumer must make any records required to be kept under this exemption available to authorised officers of the EPA on request.

7.5. The consumer must ensure that any application of excavated natural material to land must occur within a reasonable period of time after its receipt.

8. Definitions

In this exemption:

application or apply to land means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

consumer means a person who applies, or intends to apply excavated natural material to land.

Manager Waste Strategy and Innovation

Environment Protection Authority

(by delegation)

Notes

The EPA may amend or revoke this exemption at any time. It is the responsibility of the consumer to ensure they comply with all relevant requirements of the most current exemption The current version of this exemption will be available on www.epa.nsw.gov.au

In gazetting or otherwise issuing this exemption, the EPA is not in any way endorsing the use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this exemption are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this exemption nor the accompanying order guarantee that the environment, human health or agriculture will not be harmed.

The consumer should assess whether or not the excavated natural material is fit for the purpose the material is proposed to be used for, and whether this use will cause harm. The consumer may need to seek expert engineering or technical advice.

Regardless of any exemption provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The receipt of excavated natural material remains subject to other relevant environmental regulations in the POEO Act and the Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of having an exemption, is guilty of an offence and subject to prosecution.

This exemption does not alter the requirements of any other relevant legislation that must be met in utilising this material, including for example, the need to prepare a Safety Data Sheet (SDS).

Failure to comply with the conditions of this exemption constitutes an offence under clause 91 of the Waste Regulation.

Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014

The reclaimed asphalt pavement order 2014

Introduction

This order, issued by the Environment Protection Authority (EPA) under clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), imposes the requirements that must be met by suppliers of reclaimed asphalt pavement to which 'the reclaimed asphalt pavement exemption 2014' applies. The requirements in this order apply in relation to the supply of reclaimed asphalt pavement for application to land for road maintenance activities, being use as a road base and sub base, applied as a surface layer on road shoulders and unsealed roads, and use as an engineering fill. The requirements in this order also apply to the supply of reclaimed asphalt pavement for use as an alternative raw material in the manufacture of asphalt.

1. Waste to which this order applies

1.1. This order applies to reclaimed asphalt pavement. In this order, reclaimed asphalt pavement means an asphalt matrix which was previously used as an engineering material and which must not contain a detectable quantity of coal tar or asbestos.

2. Persons to whom this order applies

2.1. The requirements in this order apply, as relevant, to any person who supplies reclaimed asphalt pavement that has been generated, processed or recovered by the person.

2.2. This order does not apply to the supply of reclaimed asphalt pavement to a consumer for land application or in connection with a process involving thermal treatment at a premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

3. Duration

3.1. This order commences on 24 November 2014 and is valid until revoked by the EPA by notice published in the Government Gazette.

4. Processor requirements

The EPA imposes the following requirements on any processor who supplies reclaimed asphalt pavement.

General requirements

4.1. The processor must implement procedures to minimise the potential to receive or process reclaimed asphalt pavement containing asbestos. These procedures must be formally documented and the records of compliance must be kept for a period of six years.

4.2. The processor must implement procedures to minimise the potential to receive or process reclaimed asphalt pavement in which the asphalt matrix contains detectable quantities of coal tar. These procedures must be formally documented and the records of compliance must be kept for a period of six years.

Notification

4.3. On or before each transaction, the processor must provide the following to each person to whom the processor supplies the reclaimed asphalt pavement:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of the reclaimed asphalt pavement exemption, or a link to the EPA website where the reclaimed asphalt pavement exemption can be found; and
- a copy of the reclaimed asphalt pavement order, or a link to the EPA website where the reclaimed asphalt pavement order can be found.

Record keeping and reporting

4.4. The processor must keep a written record of the following for a period of six years:

- the quantity of any reclaimed asphalt pavement supplied; and
- the name and address of each person to whom the processor supplied the reclaimed asphalt pavement, or the registration details of the vehicle used to transport the reclaimed asphalt pavement.

5. Definitions

In this order:

application or apply to land means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

asphalt matrix means the solid material typically comprising of sand, aggregates and similar materials bound together with bituminous and/or other similar binders.

coal tar means the by-product of the thermal processing of coal and means material that has or reasonably is suspected to have present volatile organic contaminants, such as phenols, as well as other toxic materials such as polycyclic aromatic hydrocarbons (PAHs).

consumer means:

- a person who applies, or intends to apply, reclaimed asphalt pavement to land; and
- a person who uses, or intends to use, reclaimed asphalt pavement in connection with a process involving thermal treatment.

detectable quantity of coal tar means the coal tar deemed to be present in an asphalt matrix when it gives a positive red colour result when tested using RTA Test Method T542.

processor means a person who processes, mixes, blends, or otherwise incorporates reclaimed asphalt pavement into a material in its final form for supply to a consumer.

transaction means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of reclaimed asphalt pavement waste that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of reclaimed asphalt pavement waste the first supply of reclaimed asphalt pavement waste as required under the arrangement.

Manager Waste Strategy and Innovation

Environment Protection Authority

(by delegation)

Notes

The EPA may amend or revoke this order at any time. It is the responsibility of each of the generator and processor to ensure it complies with all relevant requirements of the most current order. The current version of this order will be available on www.epa.nsw.gov.au

In gazetting or otherwise issuing this order, the EPA is not in any way endorsing the supply or use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this order are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this order nor the accompanying exemption guarantee that the environment, human health or agriculture will not be harmed.

Any person or entity which supplies reclaimed asphalt pavement should assess whether the material is fit for the purpose the material is proposed to be used for, and whether this use may cause harm. The supplier may need to seek expert engineering or technical advice.

Regardless of any exemption or order provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The supply of reclaimed asphalt pavement remains subject to other relevant environmental regulations in the POEO Act and Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of this order, is guilty of an offence and subject to prosecution.

This order does not alter the requirements of any other relevant legislation that must be met in supplying this material, including for example, the need to prepare a Safety Data Sheet.

Failure to comply with the conditions of this order constitutes an offence under clause 93 of the Waste Regulation.

Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014

The reclaimed asphalt pavement exemption 2014

Introduction

This exemption:

- is issued by the Environment Protection Authority (EPA) under clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation); and
- exempts a consumer of reclaimed asphalt pavement from certain requirements under the *Protection of the Environment Operations Act 1997* (POEO Act) and the Waste Regulation in relation to the application of that waste to land or in connection with a process of thermal treatment, provided the consumer complies with the conditions of this exemption.

This exemption should be read in conjunction with 'the reclaimed asphalt pavement order 2014'.

1. Waste to which this exemption applies

1.1. This exemption applies to reclaimed asphalt pavement that is, or is intended to be:

1.1.1. applied to land for road related activities including road construction or road maintenance activities being:

(a) use as a road base and sub base,

(b) applied as a surface layer on road shoulders and unsealed roads, and

(c) use as an engineering fill material.

1.1.2. used as an alternative input into thermal processes for non-energy recovery purposes in the manufacture of asphalt.

1.2. Reclaimed asphalt pavement means an asphalt matrix which was previously used as an engineering material and which must not contain a detectable quantity of coal tar or asbestos.

2. Persons to whom this exemption applies

2.1. This exemption applies to any person who applies, or intends to apply, reclaimed asphalt pavement to land and any person who uses, or intends to

use, reclaimed asphalt pavement in connection with a process of thermal treatment as set out in 1.1.

3. Duration

3.1. This exemption commences on 24November 2014 and is valid until revoked by the EPA by notice published in the Government Gazette.

4. Premises to which this exemption applies

4.1. This exemption applies to the premises at which the consumer's actual or intended application of reclaimed asphalt pavement is carried out.

5. Revocation

5.1. 'The reclaimed asphalt pavement exemption 2012' which commenced on 16 January 2012 is revoked from 24 November 2014.

6. Exemption

6.1. Subject to the conditions of this exemption, the EPA exempts each consumer from the following provisions of the POEO Act and the Waste Regulation in relation to the consumer's actual or intended application of reclaimed asphalt pavement to land or use in connection with a process of thermal treatment at the premises:

- section 48 of the POEO Act in respect of the scheduled activities described in clauses 39, 40 and 42 of Schedule 1 of the POEO Act;
- Part 4 of the Waste Regulation;
- section 88 of the POEO Act; and
- clause 109 and 110 of the Waste Regulation.

6.2. The exemption does not apply in circumstances where reclaimed asphalt pavement is received at the premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

7. Conditions of exemption

The exemption is subject to the following conditions:

7.1. The reclaimed asphalt pavement can only be:

7.1.1. applied to land for road related activities including road construction or road maintenance activities being:

(a) use as a road base and sub base,

(b) applied as a surface layer on road shoulders and unsealed roads, and

(c) use as an engineering fill material

7.1.2. used as an alternative input into thermal processes for non-energy recovery purposes in the manufacture of asphalt.

7.2. The consumer must ensure that any application of reclaimed asphalt pavement to land or any use of reclaimed asphalt pavement in connection with a process of thermal treatment must occur within a reasonable period of time after its receipt.

8. Definitions

In this exemption:

application or apply to land means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

asphalt matrix means the solid material typically comprising of sand, aggregates and similar materials bound together with bituminous and/or other similar binders.

coal tar means the by-product of the thermal processing of coal and means material that has or reasonably is suspected to have present volatile organic contaminants, such as phenols, as well as other toxic materials such as polycyclic aromatic hydrocarbons (PAHs).

consumer means:

- a person who applies, or intends to apply, reclaimed asphalt pavement to land; and
- a person who uses, or intends to use, reclaimed asphalt pavement in connection with a process involving thermal treatment.

detectable quantity of coal tar means the coal tar deemed to be present in an asphalt matrix when it gives a positive red colour result when tested using RTA Test Method T542.

Manager Waste Strategy and Innovation

Environment Protection Authority

(by delegation)

Notes

The EPA may amend or revoke this exemption at any time. It is the responsibility of the consumer to ensure they comply with all relevant requirements of the most current exemption. The current version of this exemption will be available on www.epa.nsw.gov.au

In gazetting this exemption, the EPA is not in any way endorsing the use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this exemption are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this exemption nor the accompanying order guarantee that the environment, human health or agriculture will not be harmed.

The consumer should assess whether or not the reclaimed asphalt pavement is fit for the purpose the material is proposed to be used for, and whether this use will cause harm. The consumer may need to seek expert engineering or technical advice.

Regardless of any exemption provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site.

The receipt of reclaimed asphalt pavement remains subject to other relevant environmental regulations in the POEO Act and Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of having an exemption, is guilty of an offence and subject to prosecution.

This exemption does not alter the requirements of any other relevant legislation that must be met in utilising this material, including for example, the need to prepare a Safety Data Sheet (SDS).

Failure to comply with the conditions of this exemption constitutes an offence under clause 91 of the Waste Regulation.