



## Detailed Site Investigation

# Proposed Redevelopment Works Maitland Gaol, John Street, East Maitland – 6 - 18 John St, East Maitland 2323

Report Ref: E0076-DSI-001-Rev0

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31 July 2023

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**Project Details**

<b>Site Address:</b>	Maitland Gaol, John Street, East Maitland
<b>Project Type:</b>	Detailed Site Investigation

Project no	Report type	Report no
E0076	DSI	001

**Report Register**

Revision Number	Reported By	Reviewed By	Date
Rev0	LK	JD	27/7/2023

We confirm that the following report has been produced for Maitland City Council, based on the described methods and conditions within.

For and on behalf of Hunter Environmental Consulting,



**Jake Duck**

*Environmental Scientist*

Bachelor of Environmental Science and Management

## Executive Summary

Hunter Environmental Consulting (HEC) was engaged by Maitland City Council to undertake a Detailed Site Investigation (DSI) detailed sampling at the Site located at Maitland Gaol, John Street, East Maitland (herein after referred to as “the Site”).

The Site is currently proposed to undergo redevelopment works to incorporate a new carpark and café/administration building. It is understood this DSI is required for due diligence purposes.

This PSI includes the following elements:

- Review of historical aerial images of the Site and surrounding area
- Compilation of a historical title summary
- Review of a Section 10.7 Planning Certificate
- Review of publicly available environmental databases and legislative instruments
- Site inspection and interview with knowledgeable Site representative (if available)
- A Conceptual Site Model (CSM) with assessment of contamination and source-pathway-receptor linkages
- Recommendations for further investigation, any management requirements and/or any ongoing management, monitoring or remedial works that may be required.

Soil sampling was conducted to supplement the desktop assessment for contamination purposes. Soil sampling consisted of:

- Collection of thirty-six (36) primary samples analysed for contaminants of potential concern (CoPC);
- Collection of two (2) intra-laboratory duplicate samples for Quality Assurance / Quality Control (QA/QC) purposes
- Collection of one (1) inter-laboratory triplicate sample for QA/QC purposes
- Collection of one (1) rinsate sample for QA/QC purposes
- A Trip Spike/Trip Blank sample as part of the QA/QC program.

Groundwater sampling was also conducted. The sampling consisted of:

- Collection of one (1) groundwater sample from newly installed monitoring wells; and
- Collection of one (1) intra-laboratory duplicate sample for Quality Assurance / Quality Control (QA/QC) purposes.

The detailed desktop review of available information and thorough Site inspection including a detailed soil and groundwater investigation have enabled the development of a CSM allowing assessment of potential health and environmental issues relating to the Site. Key findings were:

1. Potential contamination sources within the investigation area are limited to the presence of redundant UPSS, consisting of three (3) bowsers, three (3) vent pipes and one (1) identified UST;
2. Visible signs of gross contamination were not observed during Site inspection and intrusive works;

3. Minor hydrocarbon staining was observed within borehole locations advanced within close proximity to the UPSS area;
4. One shallow sample location (BH2 0.2-0.3) was reported within a Lead concentration in exceedance of the adopted SAC (HIL-D), however a 95% UCL was calculated for the dataset with the UCL value acceptable under this criteria;
5. Nine (9) samples exceeded the adopted SAC (EILs) for Benzo(a)Pyrene (0.7mg/kg) however, this criteria is considered to be overly conservative in context of the Site and proposed future land use (commercial), additionally no sensitive ecological receptors were identified at the Site and receptors would likely be limited to uptake of terrestrial flora at the Site in which exhibited no stress. B(a)P EIL exceedances, therefore, are not considered to have potential to significantly affect the Site or be a driver for remediation;
6. Three (3) groundwater monitoring wells were installed at the Site. Only one (1) well (MW3) was observed to be containing water during the GME. Groundwater encountered at the Site is considered to be perched water relating to the surface infiltration upgradient of the monitoring well location. Infiltration to the water table is considered low-risk at the Site given the low permeability soils encountered; and
7. A zinc concentration within the groundwater QA/QC sample was reported in slight exceedance of Freshwater GILs, however the exceedance was reported 1µg/L higher than the adopted criteria, this exceedance is not considered significant in determining groundwater condition at the Site.

In summary, based on the desktop study and detailed soil sampling conducted on the Site, no indication of gross contamination has been identified which would constrain the development of the Site for the proposed commercial development. However, uncertainty remains for materials localised adjacent to the UST pit and surrounding associated infrastructure. It is recommended a Remedial Action Plan (RAP) be prepared for the decommissioning and removal of UPSS in accordance with the Guidelines for the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008 and the UPSS Technical Note: Decommissioning, Abandonment and Removal of UPSS, with contingency for any contaminated material located within the remediation area. The decommissioning of the UPSS at the Site would remove the point source of potential contamination and any associated risks for future Site users. The validation of the remediation works should be conducted by a suitably qualified environmental consultant and documented within a validation report adhering to best practice guidelines.

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## **1 Introduction**

### **1.1 Background**

Hunter Environmental Consulting (HEC) was engaged by Maitland City Council to undertake a Detailed Site Investigation (DSI) with soil and groundwater sampling at Maitland Gaol, John Street, East Maitland (herein after referred to as “the Site”).

The Site is currently proposed to undergo redevelopment works. The DSI is required for due diligence purposes as part of the development application.

A Site Features Plan is presented as Figure 1 of **Annex A**.

### **1.2 Objectives**

The objectives of this DSI were to investigate potential contaminant sources, pathways and receptors in relation to the Site as well as inform preliminary consideration of potential risks to human health and/or the environment within the context of the most sensitive potential land use. For the purpose of the investigation, HIL-D has been adopted as the most sensitive land use (ie. Commercial landuse).

This report has been prepared in general accordance with provisions for a DSI as defined within the NSW EPA (2022) Contaminated Land Guidelines: Sampling design part 1 – application (NSW EPA, 2022), the NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Sites (NSW EPA, 2020) and National Environment Protection (Assessment of Site Contamination) Measure (National Environmental Protection Council (NEPC), 2013).

All information collected informed the development of the preliminary conceptual site model (CSM) which provides a representation of potential sources of contamination and evaluate the contaminants of potential concern (CoPC); areas of potential contamination; potential human and ecological receptors; and potentially affected media (such as soil and groundwater).

### **1.3 Scope of Works**

#### **1.3.1 Detailed Site Investigation**

This DSI includes the following elements:

- Review of historical aerial images of the Site and surrounding area
- Compilation of a historical title summary
- Review of a Section 10.7 Planning Certificate
- Review of publicly available environmental databases and legislative instruments
- Site inspection and interview with knowledgeable Site representative (if available)
- A CSM with assessment of source-pathway-receptor linkages
- Recommendations for further investigation, any management requirements and/or any ongoing management, monitoring or remedial works that may be required



## 1.4 Detailed Soil Investigation

Detailed soil sampling was conducted to supplement the desktop assessment for contamination purposes. Soil sampling consisted of:

- Collection of thirty-six (36) primary samples analysed for contaminants of potential concern (CoPC);
- Collection of two (2) intra-laboratory duplicate samples for Quality Assurance / Quality Control (QA/QC) purposes
- Collection of one (1) inter-laboratory triplicate sample for QA/QC purposes
- Collection of one (1) rinsate sample for QA/QC purposes
- A Trip Spike/Trip Blank sample as part of the QA/QC program.

Preparation of this report includes recommendations for further investigation, any management requirements and/or any ongoing management, monitoring or remedial works that may be required.

## 1.5 Detailed Groundwater Investigation

A groundwater investigation was also conducted to supplement the findings of the soil investigation. A total of four (4) borehole locations were converted to groundwater monitoring wells. Groundwater sampling consisted of:

- Collection of one (1) groundwater sample<sup>1</sup>;
- Collection of one (1) duplicate sample for QA/QC purposes.

## 2 Site Description

### 2.1 Site & Lot Identification

The Site is located at Maitland Gaol, John Street, East Maitland, legally identified as Lot 469 on Deposited Plan (DP) 1002766. The Site forms a rectangular shaped block of approximately 20,200m<sup>2</sup>.

A summary of Site information is provided in **Table 2.1** below.

**Table 2.1** - Site identification

Item	Description
Current Site Owner	The State of NSW
Site Address	Maitland Gaol, John Street, East Maitland
Current Zoning	SP3 Tourist
Legal Description	Lot 469 DP 1002766
Local Government Authority	Maitland City Council

<sup>1</sup> Two (2) of the three (3) monitoring wells were identified as being dry during the groundwater monitoring event.

Site Area	Approximately 20,200m <sup>2</sup>
Elevation	18 - 28m Above Sea Level (ASL)
Geographical Location (GDA94-MGA56)	E367896.76 N6376062.107

## 2.2 Surrounding Land Use

The Site is located predominantly within a residential area of East Maitland, NSW. Review of satellite imagery identified surrounding land uses as summarised in **Table 2.2** below.

**Table 2.2** - Summary of surrounding land use

Direction	Land Use	Distance
North	R1 General Residential	Adjacent
East	R1 General Residential	Adjacent
South	R1 General Residential	Adjacent
West	RE1 Public Recreation and SP1 Special Activities Public Administration Building	Adjacent

### 3 Background Data Review & Database Searches

#### 3.1 Summary of Ownership & Site Use

Historical title searches completed for the Site provide a summary of ownership as described in **Table 3.1** below.

**Table 3.1** - Summary of site ownership (EMM, 2023)

Date	Proprietor
<b>Lot 469 DP1002766</b>	
2 July 1999 to date	The State of NSW
<i>(12 May 1894 to date)</i>	<i>(Reserve 20743 for Gaol and Lockup, notified Government Gazette 12 May 1894 &amp; Government Gazette 18 Mar 1977)</i>
<b>Allotment 6 Section 21 Town East Maitland<sup>2</sup></b>	
Prior to 2 July 1999	Crown Land
<i>(18 Mar 1977 to 02 Jul 1999)</i>	<i>(Part Allotment 6 Section 21 Town East Maitland, added to Reserve 20743 for Gaol and Lockup, notified Government Gazette 12 May 1894 vide Government Gazette 18 Mar 1977)</i>
<i>(23 Feb 1973 to 18 Mar 1977)</i>	<i>(Reserve 888858 for Civil Defence Purposes)</i>
<i>(21 Sept 1889 to 02 Jul 1999)</i>	<i>(Reserve 9705 for Police Purposes, notified Government Gazette 21 Sep 1889)</i>
<b>Allotment 7 Section 21 Town East Maitland<sup>3</sup></b>	
Prior to 02 Jul 1999	Crown Land
<i>(12 May 1894 to 02 Jul 1999)</i>	<i>(Reserve 20743 for Gaol and Lockup, notified Government Gazette 12 May 1894)</i>

Historical title documents sourced as part of this assessment are presented as **Annex B**.

#### 3.2 Historical Photographs

Historical aerials and satellite images dating 1954-2022 provide a summary of development at the Site and within the surrounding area. Historical images are presented as part of **Annex C** and a summary of review in **Table 3.2** below.

**Table 3.2** - Historical aerial review

Date	Summary
1954	Low resolution, black and white aerial image, suggesting majority of the present-day structures are on site. Surrounding areas show low density residential dwellings and agricultural land use.
1966	Medium resolution, black and white aerial, the Site remains generally consistent with the previous aerial. Increased low density residential dwellings in surrounding areas.

1970	Low resolution, black and white aerial image, the Site and surrounding area remain generally consistent with the previous aerial.
1976	Medium resolution, black and white aerial image, the Site and surrounding area remain generally consistent with the previous aerial.
1984	Medium resolution, black and white aerial image, the Site and surrounding area remain generally consistent with the previous aerial.
1987	Poor resolution, black and white aerial image, the Site and surrounding area remain generally consistent with the previous aerial.
1993	High resolution, colour aerial image, an additional small structure has been constructed on site. Surrounding areas show low residential dwellings and agricultural land use.
1998	Medium resolution, colour aerial image, the Site and surrounding area remain generally consistent with the previous aerial.
2001	Medium resolution, colour aerial image, the Site and surrounding area remain generally consistent with the previous aerial.
2005	High resolution, colour aerial image, the Site and surrounding area remain generally consistent with the previous aerial.
2011	High resolution, colour aerial image, the Site and surrounding area remain generally consistent with the previous aerial.
2014	High resolution, colour aerial image, the Site and surrounding area remain generally consistent with the previous aerial.
2016	High resolution, colour aerial image, the Site and surrounding area remain generally consistent with the previous aerial.
2019	High resolution, colour aerial image, the Site and surrounding area remain generally consistent with the previous aerial.
2022	High resolution, colour aerial image, the Site and surrounding area remain generally consistent with the previous aerial.

### 3.3 Topography & Hydrology

Topography of the area is characterised by undulating low hills and rises and gently inclined side slopes. Review of Google Earth Pro (2021) indicates the Site slightly slopes from 18m Above Sea Level (ASL) in the north to 28m ASL in the south. The Site is approximately 1.3km east of Wallis Creek and 1.3 southeast of the Hunter River.

#### 3.3.1 Lithology & Geology

The dominant subsurface profile at the Site consists of mixed interbedded sedimentary deposits associated with the Tomago Coal Measures which are overlain by moderately deep to deep, moderately well to imperfectly drained soils consistent with the Beresfield Residual soil group. To the north and west of the Site and adjacent to Wallis Creek, the underlying geology consists of alluvial

floodplain and terrace deposits consisting of clay, silt, fine to medium-grained quartz-lithic sand and polymictic gravel consistent which is overlain by Hunter Alluvium (EMM, 2023).

### 3.3.2 Hydrogeology

Review of the NSW Department of Primary Industries – Office of Water / Water Administration Ministerial Corporation database identified 27 registered bores within 2km of the Site. Bore details are presented in **Table 3.3** below.

**Table 3.3** - Groundwater bore details

Bore ID	Construction Date	Location	Depth (mbgl <sup>2</sup> )	Purpose
GW019629	01/03/1963	782.0m Northwest	6.1	Unknown
GW065476	01/01/1987	1003.8m West	13.0	Irrigated Agriculture
GW202610	23/05/2012	1041.4m Southwest	6.0	Monitoring
GW202609	22/05/2012	1043.5m Southwest	12.5	Monitoring
GW202608	22/05/2012	1044.0m Southwest	7.5	Monitoring
GW201107	01/07/1987	1045.7m West	13.0	Irrigated Agriculture
GW203477	01/01/1980	1052.5m Northwest	6.5	Irrigation
GW202611	23/05/2012	1062.0m Southwest	10.0	Monitoring
GW202612	24/05/2012	1068.0m Southwest	7.0	Monitoring
GW202613	24/05/2012	1099.0m Southwest	6.0	Monitoring
GW202614	24/05/2012	1100.4m Southwest	9.5	Monitoring
GW202476	25/05/2012	1133.4m Southwest	4.0	Monitoring
GW202477	25/05/2012	1183.1m Southwest	6.0	Monitoring
GW068666	-	1218.7m West	-	Monitoring
GW078839	21/07/1993	1512.2 Southeast	239	Monitoring
GW078838	20/07/1993	1601.9m Southeast	26.9	Monitoring
GW078842	18/07/1996	1611.1m Southeast	24.0	Monitoring
GW078841	18/07/1996	1673.1m Southeast	29.6	Monitoring
GW078840	22/07/1993	1783.8m Southeast	32.8	Monitoring
GW202163	03/03/2008	1806.6m North	12.0	Irrigation, Stock
GW047691	01/05/1980	1813.5m West	10.5	Irrigated Agriculture
GW014307	01/10/1956	1833.2m Northwest	9.1	Irrigated Agriculture
GW027203	01/05/1967	1893.6m Northwest	9.1	Irrigated Agriculture

<sup>2</sup> Metres Below Ground Level

GW078843	14/11/1996	1909.4m Southwest	11.2	Monitoring
GW078844	15/11/1996	1923.3m Southeast	24	Monitoring
GW053069	-	1942.3m Northeast	12	Irrigated Agriculture
GW029701	-	1935.6m Northeast	10.4	Unknown

### 3.4 Environmental Incident History / Register

Sources to inform consideration of potential environment incidents at the Site were not identified as part of this investigation.

### 3.5 Onsite Database Searches

#### 3.5.1 Current & Former Environment Protection Licences

There is one surrendered NSW EPA Environment Protection License (EPL) at the Site issued to the NSW Soil Conservation Service for the Waterways Within the Hunter Valley Flood Mitigation Scheme (EPL Number 12439). An additional two licenses were issued to the Forestry Corporation of NSW (EPL Numbers 3957 and 4017) which encompass the Lower and Upper Northeast Regions respectively, however these only relate to forestry activities in State Forests and Crown-Timber Lands. Both licenses are no longer in force (EMM, 2023).

#### 3.5.2 Heritage

Review of the Heritage Data Source - Planning & Environment, indicates the Site is affected by onsite heritage items. The closest registered heritage item is situated onsite as the East Maitland Heritage Conservation Area and Maitland Correctional Centre. Registered heritage items within the area are described in **Table 3.4** below.

**Table 3.4** - Heritage item summary

Heritage Item Number	Description	Approx. Distance from Site
C3	East Maitland Heritage Conservation Area	0.0m Onsite
I52	Maitland Correctional Centre	0.0m Onsite
I49	Courthouse Parklands	23.0m Southwest
I50	Courthouse	23.0 Southwest
I51	Police Station	25.9m Northwest
I65	Nenagh	27.3m Northeast
I53	House	39.1m Southeast
I119	Government Railway	72.7 West
I31	Former Post Office and Stables	151.1 Southwest

173	Hillside	176.8 Northeast
1296	Maitland Correctional Centre	0.0m Onsite
1016	Police Station (East Maitland)	25.0m Northwest
1135	East Maitland Railway Station Group	73.1m West
494	Post Office and Stables (Former)	152.2m Southwest

### 3.5.3 Contaminated Land Records

A review of the NSW EPA Contaminated Land Record of Notices was completed on 29<sup>th</sup> of June 2023. This review identified that the Site is not subject to regulation by the NSW EPA under Section 60 of the *Contaminated Land Management (CLM) Act 1997* and similarly that there are no Sites within the surrounding area subject to regulation under the *CLM Act 1997*.

A review of the NSW EPA List of Contaminated Sites was completed 29<sup>th</sup> of June 2023. This review identified that the Site has not been notified to the EPA as a contaminated Site and similarly that there are no Sites within the surrounding area that have been notified. The findings of these reviews indicate that the Site is unlikely to be impacted by contamination known to the EPA.

### 3.5.4 Naturally Occurring Asbestos

NSW Department of Industry, Resources & Energy (2022) identifies that the Site does not fall in an area known to contain naturally occurring asbestos.

### 3.5.5 Acid Sulfate Soils

Review of the ePlanning Spatial Viewer online database (2020) identifies the Site as being within a Class 5 acid sulfate soils (ASS) area, where ASS are not typically found. Additionally, a review of the eSPADE online database (2022) identifies the Site as being within an area of no known acid sulfate occurrence.

## 4 Data Quality Objectives

Data quality objectives (DQOs) have been developed to define the type and quality of data required to achieve the project objectives outlined in **Section 1.2**. The DQOs have been prepared in line with the DQO process outlined in the NEPM (2013) which define minimum data requirements and quality control procedures. The proposed application of the seven-step DQO approach to this project is described in **Table 4.1**.

The DQO process is validated in part by QA/QC assessment. The QA/QC assessment for this project is summarized in **Section 8** of the report.

**Table 4.1 - Data Quality Objectives**

Step	Input
<b>1. State the problem</b>	The historic land use of the Site includes the presence of three (3) petrol bowsers and associated vent pipes, indicating the presence of up to three (3) underground

	<p>petroleum storage systems (UPSS) in which has potentially contaminated soil and groundwater at the Site, presenting a risk to human health and/or the environment. Further site investigation is required to assess contamination at the site and evaluate suitability of the site for the proposed redevelopment.</p>
<b>2. Identify the Decisions</b>	<p>The objective of this investigation is to determine if the historic land uses at the Site or surrounding area have resulted in contamination at levels that may impact the proposed development. The following decisions need to be addressed:</p> <ul style="list-style-type: none"> <li>• Is there a potential for soil and groundwater contamination to be present at the Site which may pose risks to human health and environment; and</li> <li>• Is remediation or management actions required to render the Site suitable for the proposed redevelopment.</li> </ul>
<b>3. Identify Inputs into the Decision</b>	<p>The primary inputs to make the above decisions are as follows:          Inputs into the decision are:</p> <ul style="list-style-type: none"> <li>• Have samples been collected in the required areas of the site (the identified AECs)?</li> <li>• Have samples been collected at the required frequencies and adequately represent the conditions on site?</li> <li>• Is the data set adequate to perform statistical analysis, if required (i.e. calculate 95% UCL)</li> <li>• Have samples been analysed for the COPCs as identified?</li> <li>• Have concentrations exceeding the adopted criteria been reported in the samples?</li> <li>• If concentrations exceeding adopted criteria have been reported, will these areas require remediation and/or management?</li> </ul> <p>The informational inputs into the decision area:</p> <ul style="list-style-type: none"> <li>• Field observations;</li> <li>• Laboratory results (concentrations of contaminants in soil);</li> <li>• QA/QC documentation and data;</li> <li>• Adopted assessment criteria; and,</li> <li>• Relevant NSW EPA endorsed Guidelines.</li> </ul> <p>Media subject to sampling and analysis at the Site as part of this investigation consists of soil and groundwater. Assessment of surface water and/or ground gas are not considered to be required.</p>
<b>4. Define the Study Boundaries</b>	<p>The investigation is limited to the area as presented within Figure 1 of Annex A. The lateral study boundary consists of an area of approximately 4,640m<sup>2</sup> within Lot 469 of DP 1002766. The vertical study boundary is up to 4.7m (maximum depth of borehole before refusal). The temporal boundary will be the date of the fieldwork as conducted.</p>
<b>5. Define the analytical approach</b>	<p>To assess the material suitability for the future commercial land use, analytical action levels for soils are to be based on the NEPM (2013) HILs, in particular HIL – D and HSL- D.</p> <p>Groundwater will be assessed against NEPM (2013) GILs and CRC Care (2011) HSL A/B</p>



	<p>with consideration of sensitive downgradient receptors.</p> <p>Samples will be transported under appropriate chain of custody documentation to NATA accredited laboratories and the Limits of Reporting will be below the relevant criteria for each analyte.</p> <p>If the statistical parameters (or aesthetics) exceed the adopted criteria, remediation and validation will be required to render the Site fit for the proposed future land use.</p>
<p><b>6. Specify Performance or Acceptance Criteria</b></p>	<p>The null hypothesis (<math>H_0</math>) is that the material is contaminated and exceeds the adopted criteria. The alternative hypothesis (<math>H_A</math>) is that the material is not contaminated above the adopted criteria.</p> <p>Possible decision-making errors would mean:</p> <ul style="list-style-type: none"> <li>• The Site being accepted as suitable for a commercial/ industrial when it is not, thereby potentially risking human health or environmental impacts;</li> <li>• Unnecessary remedial works, disposal of the material offsite, imposing needless financial and resource burdens on the development project.</li> </ul> <p>Acceptable limits on the likelihood of making decision errors:</p> <ul style="list-style-type: none"> <li>• Null hypothesis (<math>H_0</math>): the 95% UCL, and other requirements, are &gt; the action level; and</li> <li>• Alternate hypothesis (<math>H_A</math>): the 95% UCL, and other requirements, are <math>\leq</math> the action level.</li> </ul> <p>Potential outcomes include Type I and Type II errors:</p> <ul style="list-style-type: none"> <li>• Type I error of determining the Site is acceptable for the proposed land use when it is not (wrongly rejects true <math>H_0</math>);</li> <li>• Type II error of determining the Site is unacceptable for the proposed land use when it is acceptable (wrongly accepts false <math>H_0</math>).</li> </ul> <p>To limit the potential for decision errors, a range of quality assurance processes were adopted. A quantitative assessment of the potential for false negatives / false positives and/or under or over recognizing of analytical results was undertaken using the data quality assurance information collected. Data quality was assessed in general in accordance with guidance detailed in Schedule B(3) of the NEPM (2013).</p>
<p><b>7. Optimise the Design for Obtaining Data</b></p>	<p>A stratified sampling approach will be adopted, where sampling locations are clustered around the existing USTs and potential migration pathways of CoPCs. Based on Appendix C of NSW EPA (2022) Sampling Design Guidelines Part 1, the number of sampling locations required for an area of &lt;5000m<sup>2</sup> is thirteen (13) on a 20m grid. For the purposes of this investigation and due to the sampling approach adopted, a total of seventeen (17) investigation locations were considered optimal for the given area.</p> <p>The field methods for sample collection, handling, and analysis (at analytical laboratories) are described in the adopted standard operating procedures (SOPs).</p> <p>Contingencies could include collecting additional samples from material that appears significantly different from the reworked fill and conducting additional analyses.</p>

## 5 Site Inspection

HEC attended the Site on the 7<sup>th</sup> of June 2023 to consolidate the desktop review described in the sections above. The Site visit included a detailed visual inspection of the proposed investigation area and infrastructure. Key findings are presented below.

At the time of investigation, the Site appeared to mainly be used for rear access to the storage shed of the existing Café located within the Gaol Staff/Warders Amenities Building.

Topographically the site declined towards the north/northwest.

Three (3) fuel bowsers were identified at the Site, labelled standard, super and diesel. Three (3) associated vent pipes were identified to the northern wall of the Gaol Amenities building. On closer investigation one (1) fill point was identified behind the Diesel bowser beneath topsoil and grass signifying the location of the diesel UST, no additional fill points were identified behind the standard or super bowsers. Brick waste was observed to the rear of the standard and super bowsers in surficial soils in which may suggest the historical filling of the former tank pit/s. It is understood that a Ground Penetrating Radar (GPR) was utilised by the client to locate the USTs, with the Diesel tank being the only UST identified at the site.

No visual signs of waste or gross contamination were observed at the Site. A small number of empty cooking oil drums and a half full drum containing an unknown oil were identified at the Site. No obvious signs of spills were observed around the drums.

## 6 Detailed Soil Investigation

As stated in **Section 1.3**, a soil investigation was commissioned following desktop review of information.

The sampling density and analytical schedule generated as part of this intrusive investigation meets the minimum requirements of a DSI as outlined within the *NSW EPA Contaminated Land Guidelines - Consultants Reporting on Contaminated Sites (2020)*.

All works were conducted in accordance NEPC (2013) best standard practices and Hunter Environmental Consulting's relevant Standard Operating Procedures (SOPs). Methodologies are outlined in the following sub-sections. Soil Investigation locations are presented in Figure 1 of **Annex A**.

### 6.1 Soil Sampling

Soil sampling was conducted to supplement the desktop assessment for contamination purposes. Soil sampling consisted of:

- Collection of thirty-six (36) primary samples analysed for contaminants of potential concern (CoPC);
- Collection of two (2) intra-laboratory duplicate samples for Quality Assurance / Quality Control (QA/QC) purposes
- Collection of one (1) inter-laboratory triplicate sample for QA/QC purposes

- Collection of one (1) rinsate sample for QA/QC purposes
- A Trip Spike/Trip Blank sample as part of the QA/QC program.

### 6.1.1 Sampling & Analysis

Sample locations were selected using a stratified sampling strategy of locations with higher contamination potential, such as surrounding existing and abandoned UST and associated infrastructure. Sampling locations and contaminants of concern were targeted following the desktop review of historical data pertaining to the Site's historical use and review of the EMM (2023) Preliminary Site Investigation conducted at the Site.

Some limitations to targeted locations were present such as existing infrastructure including subsurface services including water, power and drainage in which were identified using a combination of service plans, a service locator and Ground Penetrating Radar (GPR) previously conducted by the client.

Boreholes around the USTs were placed as close as possible to USTs, whilst avoiding underground services to intercept potential contamination pathways.

Boreholes were advanced using a 90mm solid flight auger which was decontaminated between each sample location using a phosphate-free detergent (DeCon90), utilising a using a triple rinse procedure.

## 6.2 Adopted Site Assessment Criteria (SAC)

Tier 1 assessment criteria relevant to the proposed land use have generally been adopted from the NEPM (2013). Specifically, this includes:

1. The CRC CARE (2011) health screening levels (HSLs) for petroleum hydrocarbons at 0 to <3m below ground level in sand/silt/clay, adopted to assess potential vapour risks to human receptors
2. The ASC NEPM (2013) health investigation levels (HILs), adopted to evaluate potential direct contact risks associated with the presence of other CoPC in soil (i.e. metals and PAH)
3. The CRC CARE (2011) assessment criteria for direct contact with petroleum hydrocarbons by future receptors
4. The NEPM (2013) ecological investigation levels (EILs) for inorganics to assess risks to ecological receptors
5. The NEPM (2013) ecological screening levels for coarse soil for hydrocarbon compounds to assess risks to ecological receptors

A summary of SAC adopted along with their associated values are presented in **Table 1** and **Table 2** of **Annex E**.

## 6.3 Intrusive Investigation Observations

Inspection of boreholes and soil cuttings infers the presence of fill material across the investigation area to a maximum depth of 3.5m BGL. The fill material primarily consisted of Sandy Gravel beneath the existing pavements followed by Silty Sandy Clay. The fill layer was underlain by residual clays and weathered sandstone.

Boreholes advanced in vicinity of the UPSS exhibited sections of hydrocarbon staining and slight odours, the staining appeared to be highly degraded.

No suspected Asbestos Containing Material (ACM) was observed within any of the investigation locations.

Borelogs recorded during the intrusive investigation are provided as **Annex D**.

## 6.4 Soil Analytical Results

A total of thirty-six (36) primary samples were submitted for chemical analysis for a range CoPC including:

- Heavy Metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel & Zinc)
- Total Recoverable Hydrocarbons (TRH)
- Benzene, Toluene, Xylene and Ethylbenzene (BTEX)
- Polyaromatic Hydrocarbons (PAH)
- Organophosphorus Pesticides (OPP) and Organochlorine Pesticides (OCP) (in ten (10) samples)
- Polychlorinated Biphenyls (PCBs) (in ten (10) samples)
- Asbestos in soil (in five (5) samples)

The results of the analysis of the thirty-six (36) primary soils samples indicate that all analytes were below the Limit of Reporting (LOR) and the adopted site assessment criteria (SAC) for BTEX, OC/OP Pesticides, PCBs and Asbestos.

One (1) sample (BH2 0.2-0.3) was reported with a Lead concentration (1,600 mg/kg) in exceedance of the adopted SAC (1,500 mg/kg). A 95% UCL was calculated for the Lead sample dataset, the Chebyshev 95% UCL was calculated as 320.2 (mg/kg) in which was acceptable under the adopted SAC (1,500 mg/kg (HIL-D)). All remaining heavy metals were reported acceptable under the adopted SAC.

Ten (10) samples were reported with detections for TRH (C10-C34) above the LOR, however no samples were reported in exceedance of the adopted SAC.

Fifteen (15) samples were reported with detections above the LOR, nine (9) of the samples exceeded the adopted SAC (0.7 mg/kg (ESLs)). All remaining samples were acceptable under the adopted SAC.

All five (5) Asbestos-samples were reported as absent.

Soil analytical results are included in **Table 1** and **Table 2** of **Annex F**.

## 7 Groundwater Investigation

In total, four (4) soil investigation boreholes were converted to groundwater monitoring bores and installed on-site on 19<sup>th</sup> June, 2023 during the drilling works.

A summary of groundwater well construction details as installed at the site is provided below in **Table 7.1**.

**Table 7.1:** Monitoring Well Construction Details

Well ID	MW01	MW02	MW03
Total Depth (m BTOC)	3.46	3.46	3.71
Standing Water Level (m BTOC)	-	-	2.51
Screened Aquifer Unit	CLAY	CLAY	CLAY
Bottom of Screen (mbgl)	3.5	3.5	3.51
Top of Screen (mbgl)	2.5	2.5	2.51

## 7.1 Groundwater Monitoring Event

A groundwater monitoring event (GME) was completed on 27<sup>th</sup> of June 2023 and included the purging, gauging and sampling of one (1) (MW3) of the three (3) newly installed groundwater monitoring wells. It was found that MW1 and MW2 were completely dry on the day of the GME and were not sampled.

A water quality meter was used to measure and record groundwater quality parameters during purging and sampling. Groundwater wells were purged and left to recharge prior to sampling.

Field parameters included temperature, dissolved oxygen (mh/L), pH, oxidation-reduction (redox) potential (mV), and electrical conductivity (EC) ( $\mu\text{S}/\text{cm}$ ). Samples were collected following stabilisation of measured parameters.

The final set of parameters collected during sampling is presented below in **Table 7.2**. For a full set of field parameters for each monitoring well, refer to Groundwater Sampling Sheets included in **Annex G**.

**Table 7.2:** Groundwater final Field Parameter Summary

Well ID	MW01	MW02	MW03
Sample Date	27/6/23		
Temperature ( $^{\circ}\text{C}$ )	-	-	21.9

Dissolved Oxygen (mg/L)	-	-	0.75
Electrical Conductivity (µs/cm)	-	-	2059
pH (units)	-	-	6.36
Oxidation/Reduction Potential (mV)	-	-	-36.5

## 7.2 Groundwater Sampling

One (1) groundwater sample was collected from the newly installed monitoring wells. Groundwater samples were collected with the use of disposable bailers. A new bailer was used for each sampling location and all monitoring equipment was decontaminated between well locations using a phosphate-free detergent using a triple rinse procedure with deionized water. The calibration certificate for monitoring equipment is presented in **Annex J**.

Laboratory analysis was performed for the following analytes:

- BTEX;
- TRH;
- PAH; and
- Heavy metals.

All works were conducted in accordance with HEC’s relevant Standard Operating Procedures (SOPs). Methodologies are outlined in the following sub-sections.

Groundwater well locations are presented in **Figure 1** of **Annex A**.

## 7.3 Groundwater Site Assessment Criteria

Groundwater data was assessed against the relevant Tier 1 Trigger Values for as defined or referenced within *Schedule B1* of the *NEPM 2013* (National Environmental Protection Council (NEPC), 2013). Specifically:

- Groundwater Investigation Levels (GILs) for freshwater and marine water ecosystems;
- CRC Care (2011) HSL-D Tier 1 screening values.

Analytical data was also screened against the following criteria:

- Freshwater 90% species protection (*ANZG 2018*)
- Recreational water quality and aesthetics (*ANZECC 2000*)

## **7.4 Groundwater Analytical Results**

Results of the groundwater samples analysed were reported below the adopted criteria and/or laboratory reporting limits with exception for the following:

- Concentrations reported within intra-laboratory duplicate QA/QC water sample (DUP-W – 9µg/kg) was reported in exceedance of Fresh water GILs (8µg/L) for Zinc.

Groundwater results are included in **Table 1-3** in **Annex G**.

## **8 Analytical Data Quality Assessment**

The quality of analytical data presented within this report has been assessed with reference to the following issues:

1. Sampling technique;
2. Preservation and storage of samples upon collection and transport to the laboratory;
3. Sample holding times;
4. Analytical procedures;
5. Laboratory limit of reporting (LOR);
6. Laboratory quality assurance (QA) procedures; and
7. The occurrence of apparently unusual or anomalous results.

A review of these items was conducted to assess data in terms of completeness, representativeness, comparability, accuracy and precision. A discussion of the data quality assessment related to the items listed above is provided in the subsections that follow.

### **8.1 Sample Collection, Storage, Transport & Analysis**

#### **8.1.1 General**

Samples were collected, stored and transported to the laboratory in accordance with HEC's SOPs which are consistent with guidelines provided in the NEPM (2013). All samples were collected in appropriate containers provided by the laboratory.

#### **8.1.2 Holding Times**

Laboratory analysis was undertaken within specified holding times in accordance with Schedule B3 of the NEPM (2013) and using NATA accepted analytical procedures.

#### **8.1.3 Sample Transport & Storage Temperature**

In accordance with Schedule B3 of the NEPM (2013), all samples were chilled during transport to the laboratory and evidence of chilling was recorded on the sample receipt documentation for the laboratory.

## 8.2 Field Intra-Laboratory Duplicate Assessment

Relative Percentage Differences (RPDs) were calculated between the primary sample concentration and its corresponding intra/inter-laboratory duplicate. The RPD acceptance criteria is 30% however it is noted that higher variations can be expected for organic analysis, samples with low analyte concentrations or non-homogenous samples (NEPM 2013). As such, the primary laboratory RPD acceptance criteria were used and are as follows:

1. Results <10 times the LOR: No Limit
2. Results between 10-20 times the LOR: RPD must lie between 0-50%
3. Results >20 times the LOR: RPD must lie between 0-30%

Collection of one (1) field duplicate per twenty (20) primary samples was considered appropriate. Two (2) intra-laboratory duplicate samples and one (1) inter-laboratory triplicate sample was collected as part of this investigation. All intra-laboratory soil sample RPD results were within the acceptable range for all analytes.

An inter-laboratory triplicate sample was collected. Given that each laboratory report under different LORs for a number of analytes, the higher LOR was used for the purpose of this calculation. All inter-laboratory RPD results were within acceptable ranges.

The field QA/QC is considered acceptable for the investigation. Sample and RPDs results are included in Table 3-5 of **Annex G**.

## 8.3 Laboratory Quality Assurance & Quality Control

Laboratory QA/QC procedures and results are detailed in the certified laboratory results contained in **Annex I**. The analytical methods implemented by the laboratories were reported to be consistent with the scope of their NATA accreditation and consistent with Schedule B3 of the ASC NEPM (2013). The laboratory generally reported an adequate range and frequency of data quality information (including laboratory duplicates and control samples).

Trip spike and Trip blank samples were submitted with primary samples as part of the field sampling program. The field trip blank sample returned no detections of any contaminants. The field trip spike sample was stored with the samples collected in the field and forwarded on to the laboratory for analysis. The recoveries were within the allowable range indicating transport of samples was adequate to maintain QA/QC.

A number of analytes were reported with RPD exceedances within the internal laboratory Quality Control (QC) samples. These RPD exceedances were generally reported due to heterogeneity within the sample, some RPD exceedances were reported due to matrix interference or due to the presence of significant concentrations of an analyte (exceeding the spike level).

The reported laboratory data quality was generally considered acceptable to meet the objectives of this assessment.



#### **8.4 Data Quality Summary**

Overall, the data from this investigation is considered to be of sufficient quality to serve as a basis for interpretation as part of this assessment.

### **9 Conceptual Site Model**

A CSM is a representation of site related information regarding contaminant sources, exposure pathways and human and environmental receptors. A CSM facilitates consideration of risks to human health and the environment associated with site contamination through assessment of source – pathway – receptor linkages. A CSM based on the understanding of site history and environmental setting is presented in the following sections.

**Table 9.1** Potential Sources & Associated Contaminants of Concern

Primary Sources	CoC	Secondary Sources	Transport Mechanisms	Exposure Route	Receptors
<ul style="list-style-type: none"> <li>Fuel Storage USTs and associated infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>TRH</li> <li>BTEX</li> <li>Heavy Metals</li> </ul>	<ul style="list-style-type: none"> <li>Impacted soils at depth</li> <li>Surficial soils around fill points and bowsers</li> <li>Offsite migration in groundwater</li> <li>LNAPL</li> </ul>	<ul style="list-style-type: none"> <li>Spills and leaks to soil</li> <li>Volatilisation to soil pores</li> <li>Volatilisation to air</li> <li>Vertical leaching into groundwater</li> <li>Transport in groundwater offsite</li> </ul>	<ul style="list-style-type: none"> <li>Dermal Contact or incidental ingestion of soil or groundwater</li> <li>Vapour inhalation</li> </ul>	<ul style="list-style-type: none"> <li>Current and future site users</li> <li>Future construction/maintenance workers</li> <li>Users and occupants of adjoining land</li> <li>Ecological (Flora and Soil Biota)</li> </ul>
<ul style="list-style-type: none"> <li>Imported Fill materials</li> </ul>	<ul style="list-style-type: none"> <li>TRH</li> <li>BTEX</li> <li>Heavy Metals</li> <li>ACM</li> </ul>	<ul style="list-style-type: none"> <li>Impacted soils at depth</li> <li>Offsite migration in groundwater</li> </ul>	<ul style="list-style-type: none"> <li>Leaching to surface soils</li> <li>Surface runoff to stormwater</li> <li>Leaching to groundwater</li> </ul>	<ul style="list-style-type: none"> <li>Dermal Contact or incidental ingestion of soil</li> <li>Inhalation of dust and/or fibres</li> <li>Plant uptake and/or ingestion by animals</li> </ul>	<ul style="list-style-type: none"> <li>Current and future site users</li> <li>Future construction/maintenance workers</li> <li>Users and occupants of adjoining land</li> <li>Ecological (Uptake of terrestrial Flora)</li> </ul>

## 9.1 SPR Linkage Assessment

A source-pathway-receptor (SPR) linkage is present when a pathway links a source with a receptor. These linkages are considered complete where a risk to the identified receptors may exist, now or in the future. **Table 10.2** provides an assessment of the SPR linkages identified at the Site for the identified receptors/media and the potential exposure pathway.

**Table 9.2 – SPR Assessment**

Receptor/Media	Exposure Pathway	Comments
Human - Site Users including Construction / Maintenance Workers	Incomplete	Soil and groundwater sample results considered acceptable under adopted SAC (HIL-D/HSL-A/B respectively) and 95% UCL calculations (Lead).
Users and occupants of adjoining land	Incomplete	Groundwater was not identified to contain any CoC in exceedance of the adopted SAC
Ecological	Incomplete	Ecological receptors at the Site were considered to be limited to uptake of terrestrial flora, in which exhibited no evidence of stress in relation to the identified CoC (B(a)P).

## 10 Conclusions

The detailed desktop review of available information and thorough Site inspection including a detailed soil and groundwater investigation have enabled the development of a CSM allowing assessment of potential health and environmental issues relating to the Site. Key findings were:

1. Potential contamination sources within the investigation area are limited to the presence of redundant UPSS, consisting of three (3) bowsers, three (3) vent pipes and one (1) identified UST;
2. Visible signs of gross contamination were not observed during Site inspection and intrusive works;
3. Minor hydrocarbon staining was observed within borehole locations advanced within close proximity to the UPSS area;
4. One shallow sample location (BH2 0.2-0.3) was reported within a Lead concentration in exceedance of the adopted SAC (HIL-D), however a 95% UCL was calculated for the dataset with the UCL value acceptable under this criteria;
5. Nine (9) samples exceeded the adopted SAC (EILs) for Benzo(a)Pyrene (0.7mg/kg) however, this criteria is considered to be overly conservative in context of the Site and proposed future

land use (commercial), additionally no sensitive ecological receptors were identified at the Site and receptors would likely be limited to uptake of terrestrial flora at the Site in which exhibited no stress. B(a)P EIL exceedances, therefore, are not considered to have potential to significantly affect the Site or be a driver for remediation;

6. Three (3) groundwater monitoring wells were installed at the Site. Only one (1) well (MW3) was observed to be containing water during the GME. Groundwater encountered at the Site is considered to be perched water relating to the surface infiltration upgradient of the monitoring well location. Infiltration to the water table is considered low-risk at the Site given the low permeability soils encountered; and
7. A zinc concentration within the groundwater QA/QC sample was reported in slight exceedance of Freshwater GILs, however the exceedance was reported 1µg/L higher than the adopted criteria, this exceedance is not considered significant in determining groundwater condition at the Site.

In summary, based on the desktop study and detailed soil sampling conducted on the Site, no indication of gross contamination has been identified which would constrain the development of the Site for the proposed commercial development. However, uncertainty remains for materials localised to the UST pit and surrounding associated infrastructure. It is recommended a Remedial Action Plan (RAP) be prepared for the decommissioning and removal of UPSS in accordance with the Guidelines for the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008 and the UPSS Technical Note: Decommissioning, Abandonment and Removal of UPSS, with contingency for any contaminated material located within the remediation area. The decommissioning of the UPSS at the Site would remove the point source of potential contamination and any associated risks for future Site users. The validation of the remediation works should be conducted by a suitably qualified environmental consultant and documented within a validation report adhering to best practice guidelines.

## **11 Unexpected Finds**

The presence of any unexpected finds would be highlighted during development works by the observation of any unusual physical (e.g staining, fill material, asbestos-containing material) or sensory characteristics of the soil. In the event that any significant unknown type of material is identified, site works should be stopped in that area and an assessment of the material and its likely impact on the CSM would be undertaken by an appropriately qualified environmental consultant immediately to prepare a suitable response to the occurrence. All additional works should be documented and detailed in the validation report.

## **12 Report Limitations**

HEC considers that the objectives of the original scope as presented in quote EQ0141 of the investigation have been achieved.

The analytical data and recommendations within the above report are subjected to the specific sampling and testing that was undertaken at the time of the current investigation. It should be noted that underlying Site soil conditions can vary significantly across a Site and the environment can change

over time. If conditions encountered during intrusive works are different to those contained in this report HEC should be contacted immediately for Site reassessment.

If you have any further questions about this report, please contact the undersigned.

For and on behalf of

Hunter Environmental Consulting

**Reported by:**



**Lauren Kidd**

*Graduate Environmental Scientist*

Bachelor of Environmental Science and Management

**Reviewed by:**



**Jake Duck**

*Environmental Scientist*

Bachelor of Environmental Science and Management

## References

EMM (2023) *Preliminary Site Investigation, Maitland Gaol Redevelopment*.

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NSW EPA (2022) *Contaminated Land Guidelines: Sampling Design Part 1 – Application*.

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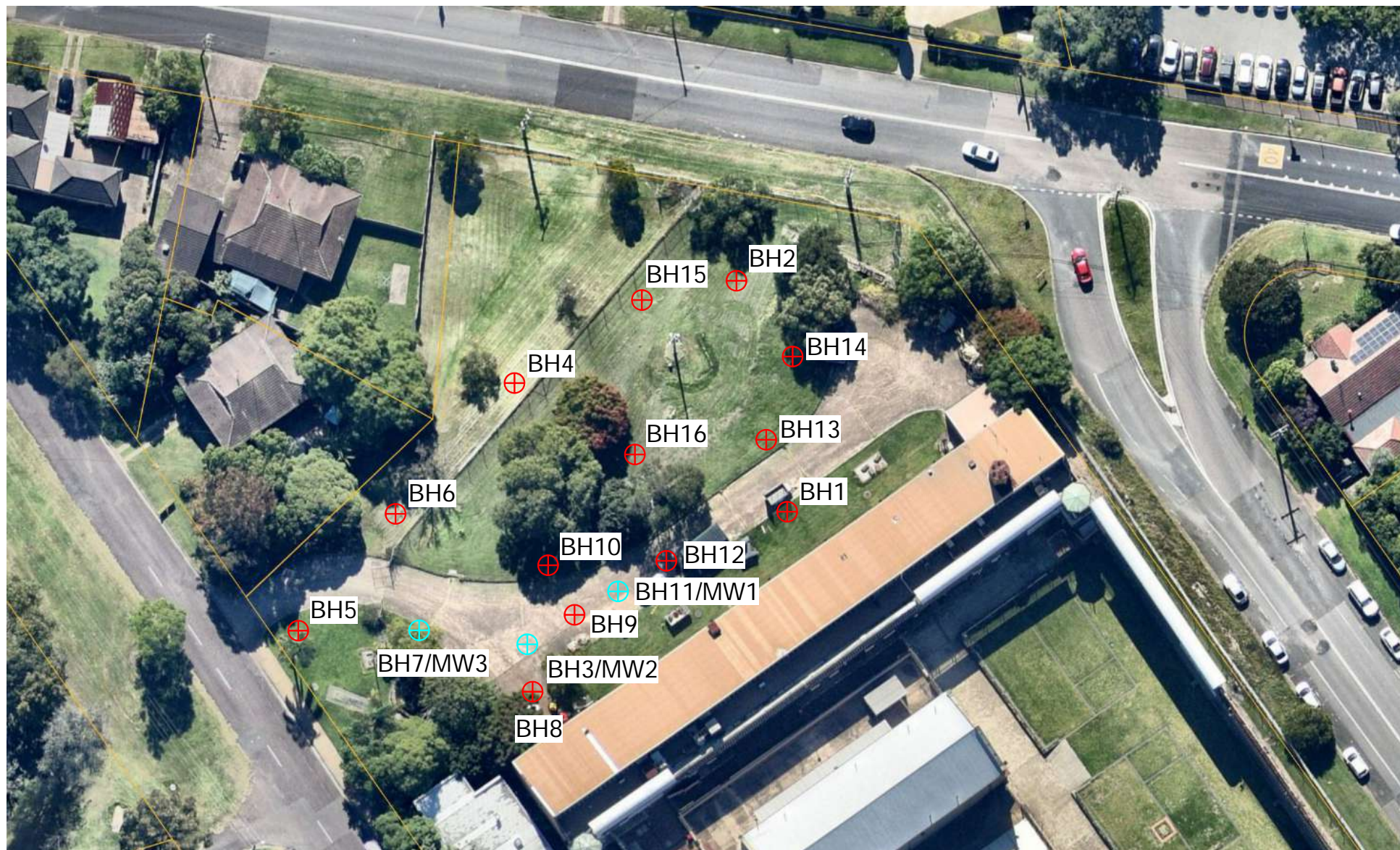
<https://trade.maps.arcgis.com/apps/PublicInformation/index.html?appid=87434b6ec7dd4aba8cb664d8e646fb06> accessed 4/7/2023.

State of NSW and Department of Planning, Industry and Environment (2022) eSPADE v2.2

<https://www.environment.nsw.gov.au/eSpade2Webapp> accessed 4/7/2023.



# Annex A



Note:  
(1) Base layer sourced from NearMap (2023).

**Figure 1: Site Figure**

**LEGEND**

- ⊕ Borehole Location
- ⊕ Borehole/Well Location







# Annex B



Status	Surv/Comp	Purpose
DP758374 Lot(s): 1, 3 Section : 60 CA101887 - LOTS 1-3 SECTION 60 DP758374		
DP1002766 Lot(s): 470		
NSW GAZ. 19-01-2007 REVOCATION OF RESERVATION OF CROWN LAND RESERVE NO. 9705 - AFFECTING LOT 470 DP1002766		Folio : 179
NSW GAZ. 25-01-2007 REVOCATION OF RESERVATION OF CROWN LAND RESERVE NO. 9705 AND ERRATUM - AFFECTING LOT 470 DP1002766		Folio : 351
DP1094345 Lot(s): 4 CA98277 - LOT 4 DP1094345		
DP1097144 Lot(s): 2 CA98591 - LOT 2 DP1097144 CA100811 - NPW		
DP1099053 Lot(s): 1 CA101109 - LOT 1 DP1099053		
DP1207466 Lot(s): 1027 CA174019 - LOT 1027 DP1207466		

**Caution:** This information is provided as a searching aid only. Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For **ALL** **ACTIVITY PRIOR TO SEPTEMBER 2002** you must refer to the RGs Charting and Reference Maps.

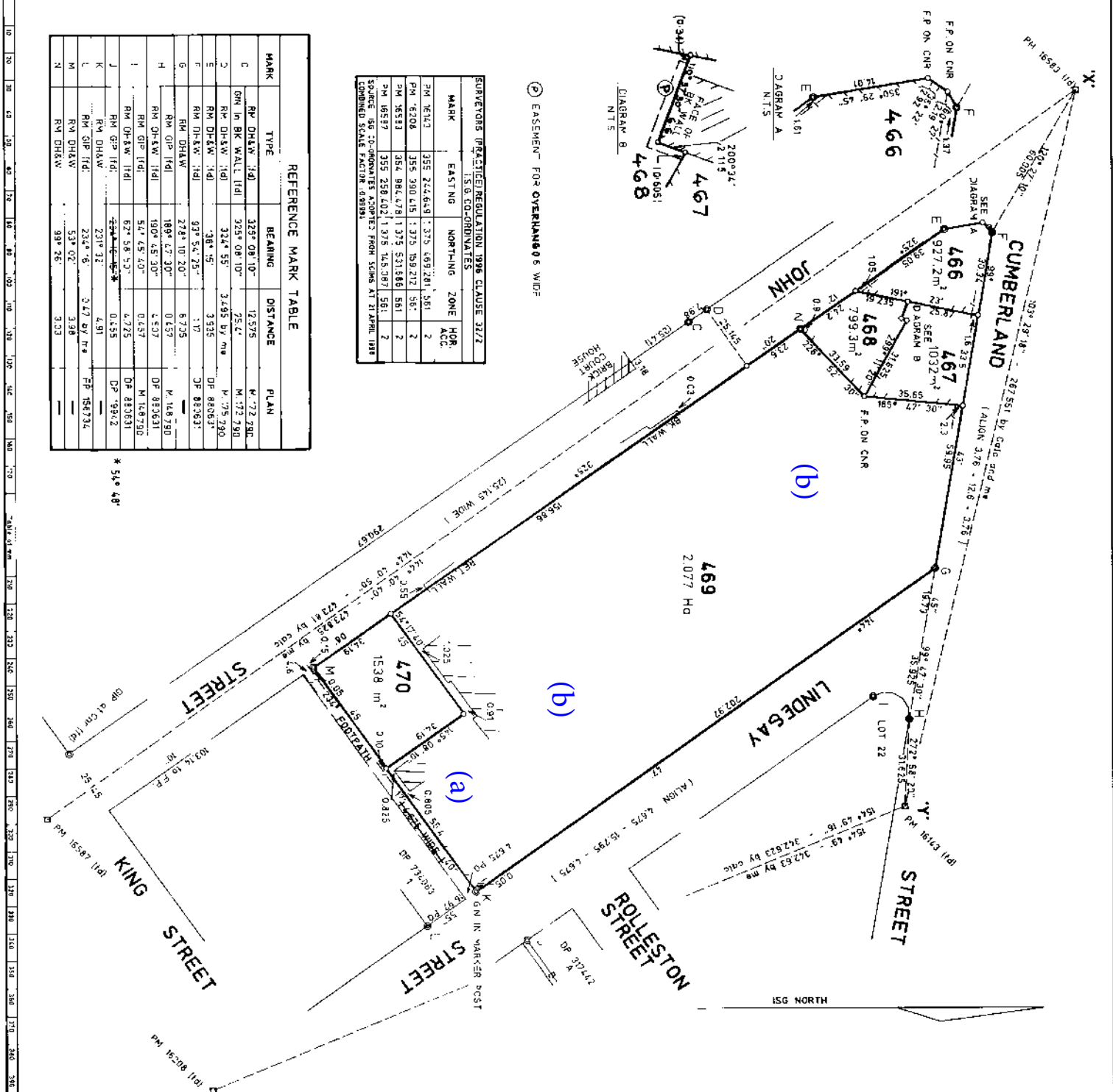
Plan	Surv/Comp	Purpose
DP12773	SURVEY	UNRESEARCHED
DP19942	SURVEY	UNRESEARCHED
DP20142	SURVEY	UNRESEARCHED
DP25151	SURVEY	UNRESEARCHED
DP317442	SURVEY	UNRESEARCHED
DP332176	COMPILATION	UNRESEARCHED
DP348906	SURVEY	UNRESEARCHED
DP367362	SURVEY	UNRESEARCHED
DP372846	COMPILATION	UNRESEARCHED
DP433262	COMPILATION	UNRESEARCHED
DP433836	COMPILATION	UNRESEARCHED
DP530498	SURVEY	SUBDIVISION
DP734063	COMPILATION	DEPARTMENTAL
DP737978	COMPILATION	DEPARTMENTAL
DP744923	COMPILATION	DEPARTMENTAL
DP758374	COMPILATION	CROWN ADMIN NO.
DP799085	COMPILATION	DEPARTMENTAL
DP799773	COMPILATION	DEPARTMENTAL
DP880631	SURVEY	SUBDIVISION
DP1002766	SURVEY	SUBDIVISION
DP1042671	COMPILATION	LIMITED FOLIO CREATION
DP1094345	COMPILATION	LIMITED FOLIO CREATION
DP1097144	COMPILATION	LIMITED FOLIO CREATION
DP1099053	COMPILATION	LIMITED FOLIO CREATION
DP1207466	COMPILATION	LIMITED FOLIO CREATION

**Caution:** This information is provided as a searching aid only. Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For **ALL** **ACTIVITY PRIOR TO SEPTEMBER 2002** you must refer to the RGs Charting and Reference Maps.

SEPARATE SEALS AND STATEMENTS OF INTENTION TO DEDICATE public roads or to create public reserves, drainage reserves, easements or other restrictions on the use of land of positive covenants.

By *[Signature]* Surveyor General of the Crown Lands Act 1989 and with authority under section 131 of the Road Property Act 1960 from the Minister of Lands and Survey, the Crown Lands Act 1989 or either of the State of New South Wales.

CROWN LANDS OFFICE APPROVAL  
 PLAN APPROVED: *[Signature]* 26/5/99  
 LAND DISTRICT: *[Signature]* 26/5/99  
 FIELD BOOK: *[Signature]* 26/5/99  
 Council's Certificate



⊙ EASEMENT FOR OVERHANGING 6 WIDE

MARK	EASTING	NORTHING	ZONE	HOR. ACC.
PM 16143	355 244.649	1 375 689.281	561	2
PM 6208	355 390.115	1 375 159.212	561	2
PM 16587	352 984.781	1 375 531.868	561	2
PM 16587	355 258.402	1 375 145.087	561	2

SOURCE: I.S.G. CO-ORDINATES ADAPTED FROM SCHEM. AT 21 APRIL 1988  
 COMBINED SCALE FACTOR: 0.9999

REFERENCE MARK TABLE

MARK	TYPE	BEARING	DISTANCE	PLAN
C	RM D.H.W. (14)	328° 08' 10"	12.575	M. 72.780
D	RM D.H.W. (14)	325° 08' 10"	25.47	M. 72.780
E	RM D.H.W. (14)	324° 55'	34.95	M. 75.780
F	RM D.H.W. (14)	38° 15'	3.915	DP 88263
G	RM D.H.W. (14)	93° 54.28"	1.17	DP 88263
H	RM D.H.W. (14)	273° 10' 20"	8.735	M. 14.8790
I	RM D.H.W. (14)	189° 47' 30"	0.57	DP 88263
J	RM D.H.W. (14)	190° 45' 30"	4.57	M. 14.8790
K	RM D.H.W. (14)	54° 45' 40"	0.457	DP 88263
L	RM D.H.W. (14)	62° 58' 52"	1.17	DP 88263
M	RM D.H.W. (14)	231° 32'	4.91	DP 88263
N	RM D.H.W. (14)	234° 6'	3.47	DP 88263
O	RM D.H.W. (14)	53° 02'	3.98	DP 88263
P	RM D.H.W. (14)	99° 26'	3.33	DP 88263

M P D

WARNING: CREASING ON FOLDING WILL LEAD TO REJECTION

Plan Drawing only to appear in this space

Registered DP1002766 2-7-1999

The System: CROWN LAND

Project: CROWN FOLIO CREATION

Method: US472-4.3\*

Lot Plan: \_\_\_\_\_

PLAN OF SUBDIVISION OF LOTS 6 & 7, SECTION 21, DP 758374

Lengths are in metres, Reduction Ratio 1:1000

Scale: NATLAND

Shaded/Locality: EAST MAITLAND

County: NORTHUMBERLAND

This is a *[Signature]* Survey Certificate

SURVAYOR: JAMES GRAY  
 Surveyor General of the Crown Lands Act 1989

DEPT OF PUBLIC WORKS & SERVICES  
 1. Survey registered under the Surveyors Act 1934.  
 2. The survey was carried out in accordance with the provisions of the Surveyors Act 1934.  
 3. The survey was carried out in accordance with the provisions of the Surveyors Act 1934.  
 4. The survey was carried out in accordance with the provisions of the Surveyors Act 1934.  
 5. The survey was carried out in accordance with the provisions of the Surveyors Act 1934.

Signature: *[Signature]*  
 Surveyor General of the Crown Lands Act 1989

Plans used in preparation of survey/compilation:  
 DP 880631  
 DP 838468  
 DP 88263  
 DP 156734  
 75-790

PLANS FOR USE ONLY for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or other restrictions on the use of land of positive covenants.

APPLICANT TO SECTION 68B OF THE CONVEYANCING ACT 1919 IT IS INTENDED TO CREATE:

1. EASEMENT FOR OVERHANGING 6 WIDE



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH  
-----

SEARCH DATE  
-----  
8/12/2022 9:11AM

FOLIO: 469/1002766  
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First Title(s): THIS FOLIO  
Prior Title(s): CROWN LAND

<u>Recorded</u>	<u>Number</u>	<u>Type of Instrument</u>	<u>C.T. Issue</u>
2/7/1999	DP1002766	DEPOSITED PLAN	FOLIO CREATED EDITION 1
18/5/2011	AG239593	DEPARTMENTAL DEALING	
4/6/2013	AH778147	DEPARTMENTAL DEALING	

\*\*\* END OF SEARCH \*\*\*

advlegs

PRINTED ON 8/12/2022



NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 469/1002766

SEARCH DATE	TIME	EDITION NO	DATE
8/12/2022	9:11 AM	1	2/7/1999

LAND

LOT 469 IN DEPOSITED PLAN 1002766  
AT EAST MAITLAND  
LOCAL GOVERNMENT AREA MAITLAND  
PARISH OF MAITLAND COUNTY OF NORTHUMBERLAND  
TITLE DIAGRAM DP1002766

FIRST SCHEDULE

THE STATE OF NEW SOUTH WALES

SECOND SCHEDULE (3 NOTIFICATIONS)

- 1 LAND EXCLUDES MINERALS (S.171 CROWN LANDS ACT 1989)
- \* 2 RESERVE NO. 20743 FOR GAOL AND LOCKUP NOTIFIED IN THE GOVERNMENT GAZETTE OF 12 MAY 1894 AND 18 MARCH 1977
- \* 3 THE LAND IS A RESERVE WITHIN THE MEANING OF PART 5 OF THE CROWN LANDS ACT 1989 AND THERE ARE RESTRICTIONS ON TRANSFER AND OTHER DEALINGS IN THE LAND UNDER THAT ACT, WHICH MAY REQUIRE CONSENT OF THE MINISTER.

NOTATIONS

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

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PRINTED ON 8/12/2022





Status	Surv/Comp	Purpose
DP758374 Lot(s): 1, 3 Section : 60 CA101887 - LOTS 1-3 SECTION 60 DP758374		
DP1002766 Lot(s): 470		
NSW GAZ. 19-01-2007 REVOCATION OF RESERVATION OF CROWN LAND RESERVE NO. 9705 - AFFECTING LOT 470 DP1002766		Folio : 179
NSW GAZ. 25-01-2007 REVOCATION OF RESERVATION OF CROWN LAND RESERVE NO. 9705 AND ERRATUM - AFFECTING LOT 470 DP1002766		Folio : 351
DP1094345 Lot(s): 4 CA98277 - LOT 4 DP1094345		
DP1097144 Lot(s): 2 CA98591 - LOT 2 DP1097144 CA100811 - NPW		
DP1099053 Lot(s): 1 CA101109 - LOT 1 DP1099053		
DP1207466 Lot(s): 1027 CA174019 - LOT 1027 DP1207466		

**Caution:** This information is provided as a searching aid only. Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For **ALL ACTIVITY PRIOR TO SEPTEMBER 2002** you must refer to the RGs Charting and Reference Maps.

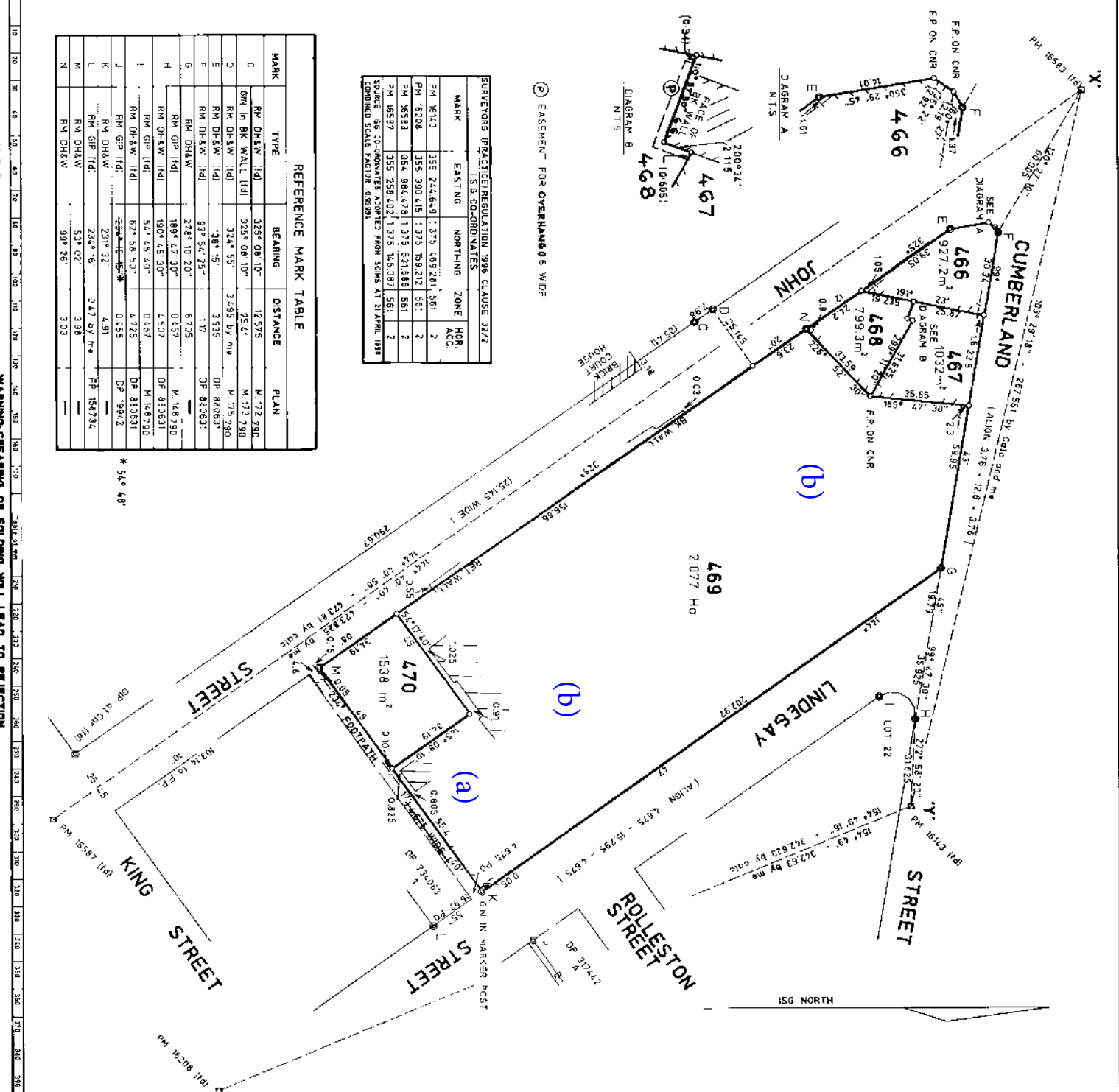
Plan	Surv/Comp	Purpose
DP12773	SURVEY	UNRESEARCHED
DP19942	SURVEY	UNRESEARCHED
DP20142	SURVEY	UNRESEARCHED
DP25151	SURVEY	UNRESEARCHED
DP317442	SURVEY	UNRESEARCHED
DP332176	COMPILATION	UNRESEARCHED
DP348906	SURVEY	UNRESEARCHED
DP367362	SURVEY	UNRESEARCHED
DP372846	COMPILATION	UNRESEARCHED
DP433262	COMPILATION	UNRESEARCHED
DP433836	COMPILATION	UNRESEARCHED
DP530498	SURVEY	SUBDIVISION
DP734063	COMPILATION	DEPARTMENTAL
DP737978	COMPILATION	DEPARTMENTAL
DP744923	COMPILATION	DEPARTMENTAL
DP758374	COMPILATION	CROWN ADMIN NO.
DP799085	COMPILATION	DEPARTMENTAL
DP799773	COMPILATION	DEPARTMENTAL
DP880631	SURVEY	SUBDIVISION
DP1002766	SURVEY	SUBDIVISION
DP1042671	COMPILATION	LIMITED FOLIO CREATION
DP1094345	COMPILATION	LIMITED FOLIO CREATION
DP1097144	COMPILATION	LIMITED FOLIO CREATION
DP1099053	COMPILATION	LIMITED FOLIO CREATION
DP1207466	COMPILATION	LIMITED FOLIO CREATION

**Caution:** This information is provided as a searching aid only. Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For **ALL** **ACTIVITY PRIOR TO SEPTEMBER 2002** you must refer to the RGs Charting and Reference Maps.

SEPARATE SEALS AND STATEMENTS OF INTENTION TO DEDICATE public roads or to create public reserves, drainage reserves, easements or restrictions on the use of land of positive covenants.

By *[Signature]* Surveyor General  
 Landed Act 1989 and with authority under section 131 of the Road Property Act 1989 from the Minister of Lands and Survey, the Crown Lands Act 1989 of the State of New South Wales.  
 K.S. 1002766  
 20 NOV 1999

CROWN LANDS OFFICE APPROVAL  
 PLAN APPROVED: *[Signature]* 26/5/99  
 LAND DESIGN: *[Signature]* 26/5/99  
 FIELD BOOK: *[Signature]* 26/5/99  
 Council's Certificate



⊙ EASEMENT FOR OVERHANGING 6 WIDE

MARK	EASTING	NORTHING	ZONE	HOR. ACC.
PM 16143	355 244.649	1 375 689.281	561	2
PM 6208	355 390.115	1 375 159.212	561	2
PM 16587	352 984.781	1 375 531.868	561	2
PM 16587	355 258.402	1 375 145.087	561	2

SOURCE: I.S.G. CO-ORDINATES ADAPTED FROM SCHEM. AT 21 APRIL 1988  
 COMBINED SCALE FACTOR: 0.9999

MARK	TYPE	BEARING	DISTANCE	PLAN
C	RM DN LW (14)	328° 08' 10"	12.575	M: 72.780
D	RM DN LW (14)	325° 08' 10"	25.47	M: 72.780
E	RM DN LW (14)	324° 55'	34.95	M: 75.780
F	RM DN LW (14)	38° 15'	3.915	DP 882631
G	RM DN LW (14)	93° 54.28"	1.17	DP 882631
H	RM DN LW (14)	273° 10' 20"	8.735	M: 14.8790
I	RM DN LW (14)	189° 47' 30"	0.57	DP 882631
J	RM DN LW (14)	190° 45' 30"	4.57	M: 14.8790
K	RM DN LW (14)	54° 45' 40"	0.457	DP 882631
L	RM DN LW (14)	62° 58' 52"	1.17	DP 882631
M	RM DN LW (14)	231° 32'	0.455	DP 882631
N	RM DN LW (14)	234° 5'	4.91	DP 154734
O	RM DN LW (14)	53° 02'	3.98	DP 154734
P	RM DN LW (14)	39° 26'	3.33	DP 154734

\* 54° 48'

PLAN ALTERED IN L.T.O. AT SURVEYOR'S REQUEST

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

M P D

DP1002766

Registered 2-7-1999

The System: CROWN LAND

Project: CROWN FOLIO CREATION

Method: US472-4.3\*

Scale: 1:1000

Location: EAST MAITLAND

County: NORTHUMBERLAND

This is a preliminary plan - it is subject to change without notice.

Survey Certificate: SURV. CERTIFICATE

Surveyor: SURVEYOR GENERAL

DEPT OF PUBLIC WORKS & SERVICES

1. SURVEYOR: JAMES GRAY

2. SURVEYOR: JAMES GRAY

3. SURVEYOR: JAMES GRAY

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NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH  
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SEARCH DATE  
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8/12/2022 9:11AM

FOLIO: 469/1002766  
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18/5/2011	AG239593	DEPARTMENTAL DEALING	
4/6/2013	AH778147	DEPARTMENTAL DEALING	

\*\*\* END OF SEARCH \*\*\*

advlegs

PRINTED ON 8/12/2022



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PARISH OF MAITLAND COUNTY OF NORTHUMBERLAND  
TITLE DIAGRAM DP1002766

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THE STATE OF NEW SOUTH WALES

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NOTATIONS

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

advlegs

PRINTED ON 8/12/2022




# Annex C

# Due Diligence Insight Report

Maitland Gaol  
6-18 John Street Maitland, NSW

8 December 2022

Report n°:  
LI-3132 DDR



# Understanding your report

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Your Report has been produced by Land Insight and Resources (Land Insight).

Your Report is based on information available from public databases and sources at the date of reporting. The information gathered relates to land that is within a 200 to 2000m radius (buffer zone) from the boundaries of the Property. A smaller or larger radius may be applied for certain records (as listed under records and as shown in report maps).

While every effort is made to ensure the details in your Report are correct, Land Insight cannot guarantee the accuracy or completeness of the information or data provided.

**The report provided by Land Insight includes** data listed on page 4 (table of contents). All sources of data and definitions are provided in the Product Guide (Attached). For a full list of references, metadata, publications or additional information not provided in this report, please contact [info@landinsight.co](mailto:info@landinsight.co)

**The report does not include** title searches; dangerous good searches or; property certificates (unless requested); or information derived from a physical inspection, such as hazardous building materials, areas of infilling or dumping/spilling of potentially contaminated materials. It is important to note that these documents and an inspection can contain information relevant to contamination that may not be identified by this Report.

Due to the ongoing nature of database development and frequency of updates provided by various state government regulators the data displayed within this report is only current from date of production.

**This Report, and your use of it, is regulated by Land Insight's Terms and Conditions (See Land Insight's Product Guide).**



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**ATTACHMENTS**

**Attachment A - Report Maps**

**Attachment B - Historical Imagery**

**Land Insight Product Guide and Terms and Conditions**

# SUMMARY

 <b>Section 1</b>	<b>PROPERTY SETTING</b>	<b>Identified</b>
Sensitive Receptors Planning Control Heritage Soil and Land Information Geology and Topography		
 <b>Section 2</b>	<b>HYDROGEOLOGY</b>	<b>Identified</b>
Aquifer Groundwater Bores and Other Borehole investigations Groundwater Dependent Ecosystems (GDE) Hydrogeology Units Wetlands		
 <b>Section 3</b>	<b>ENVIRONMENTAL REGISTERS LICENCES AND INCIDENTS</b>	<b>Identified</b>
Contaminated Land Public Register Sites Regulate by Other Jurisdictional Body (Former Gaswork sites / PFAS sites) Licensing and Regulated Sites National Pollutant Inventory (NPI)		
 <b>Section 4</b>	<b>POTENTIALLY CONTAMINATED AREAS</b>	<b>Identified</b>
Former Potentially Contaminated Land Current and Historical Potentially Contaminating activities (PCA)		
 <b>Section 5</b>	<b>NATURAL HAZARDS</b>	<b>Identified</b>
Erosion risk Bushfire prone land Fire history Flood hazards		



## Section 1 Property Setting

### 1.1 SENSITIVE RECEPTORS

Map 1.1 (200m Buffer)

Sensitive receptor	Type	Distance (m)	Direction
Anzac Park	Parks	82.5	South-west
Maitland Grossmann High School	Education	184.4	North-east

### 1.2a PLANNING CONTROLS

Map 1.2a (500m Buffer)

#### Zoning

Zoning	Type	Details	Distance (m)	Direction
SP3	Tourist	Maitland Local Environmental Plan 2011	0.0	Onsite
R1	General Residential		0.0	Adjacent
RE1	Public Recreation		25.4	South-west
SP1	Special Activities		25.4	South-west
SP2	Infrastructure		63.4	North-west
RU1	Primary Production		86.7	North-west
B4	Mixed Use		164.4	West
B2	Local Centre		289.5	South
RE2	Private Recreation		467.3	South-west

## 1.2b PLANNING OVERLAYS

Map 1.2b (500m Buffer)

### Environmental Planning Instruments

Name	Type	Details	Distance (m)	Direction
Coal Seam Gas Exclusions	State Environmental Planning Policy	State Environmental Planning Policy (Resources and Energy) 2021	0.0	Onsite
Strategic Agricultural Land			86.4	North

### Other Planning Information

Name	Category	Details	Distance (m)	Direction
-	-	-	-	-

## 1.3 HERITAGE

Map 1.3 (200m Buffer)

### State and Local Heritage Registers

Site ID	Site Name	Type	Details	Distance (m)	Direction
C3	East Maitland Heritage Conservation Area	Heritage	Conservation Area - General	0.0	Onsite
I52	Maitland Correctional Centre	Heritage	Item - General	0.0	Onsite
I49	Courthouse Parklands	Heritage	Item - General	23.0	South-west
I50	Courthouse	Heritage	Item - General	23.0	South-west
I51	Police station	Heritage	Item - General	25.9	North-west
I65	Nenagh	Heritage	Item - General	27.3	North-east
I53	House	Heritage	Item - General	39.1	South-east
I119	Government Railway	Heritage	Item - General	72.7	West
I31	Former Post Office & Stables	Heritage	Item - General	151.1	South-west
I73	Hillside	Heritage	Item - General	176.8	North-east
1296	Maitland Correctional Centre	State Heritage Inventory	Complex / Group	0.0	Onsite
1016	Police Station (East Maitland)	State Heritage Inventory	Built	25.0	North-west
1135	East Maitland Railway Station group	State Heritage Inventory	Complex / Group	73.1	West
494	Post Office & Stables (former)	State Heritage Inventory	Built	152.2	South-west

### Australian Heritage Database Register

Site ID	Site Name	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-	-

Commonwealth Heritage List, National Heritage List and World Heritage Area.

Soil Landscape

Code	Soil Landscape	Soil Group	Description	Distance (m)	Direction
REbe	Beresfield	Residual	<p>Landscape—undulating low hills and rises on Permian sediments in the East Maitland Hills region. Slope gradients 3–15%, local relief to 50 m, elevation is 20–50 m. Partially cleared tall open-forest. Landscape Variant—bea—steeper upper slopes (15–&lt;25%).</p> <p>Soils—moderately deep (&lt;120 cm), moderately well to imperfectly drained Yellow Podzolic Soils (Dy2.21), Brown Podzolic Soils (Db1.21) and brown Soloths (Db2.41) occur on crests with moderately deep (&lt;120 cm), well-drained Red Podzolic Soils (Dr2.21) and red Soloths (Dr2.41) on upper slopes, moderately well to imperfectly drained brown Soloths (Db2.41, Db1.41) and yellow Soloths (Dy3.41) on sideslopes and deep (&gt;200 cm), imperfectly to poorly drained Yellow Podzolic Soils (Dy2.21), yellow Soloths (Dy2.41, Dy3.41) and Gleyed Podzolic Soils (Dg2.41) on lower slopes.</p> <p>Qualities and Limitations—high foundation hazard, water erosion hazard, Mine Subsidence District, seasonal waterlogging and high run-on on localised lower slopes, highly acid soils of low fertility.</p>	0.0	Onsite
ALhu	Hunter	Alluvial	<p>This soil landscape covers the floodplains of the Hunter River and its tributaries. The main soils are all formed in alluvium. They include Brown Clays and Black Earths (Ug5.34, Ug5.17) on prior stream channels and on tributary flats, with Chernozems (Uf5.1) on prior stream channels adjacent to Dartbrook and Brays Hill soil landscapes and in many of the valleys such as Martindale and Widden. Alluvial Soils (loams – Um5 and sands – Um5.52, Um6.1, Uc) occur on levees and flats adjacent to the present river channel. Red Podzolic Soils and Lateritic Podzolic Soils (Dr2.11, Db2.41) are located on old terraces, with Non-calciic Brown Soils (Db1.13) and Yellow Solodic Soils in some drainage lines.</p>	100.2	North-west
REri	Rivermead	Residual	<p>Landscape—moderately broad to extensive, level to gently undulating alluvial terraces in the Hunter Plain and Paterson Mountains regions. Slope 0–4%, elevation is 5–20 m, local relief is 5–10 m. Cleared tall open-forest.</p> <p>Soils—deep (&gt;200 cm), well-drained Yellow Earths (Gn2.41, Gn2.42) and Red Earths (Gn2.15, Gn2.44) and shallow (&lt;35 cm) to deep (&gt;200 cm), moderately well to imperfectly drained Brown Podzolic Soils (Db1.21), with some Chocolate Soils (Db3.11) and deep (&gt;130 cm), moderately well-drained Brown Clays (Ug5.16). Qualities and Limitations—high foundation hazard, localised flood hazard, seasonal waterlogging on imperfectly drained terraces.</p>	301.8	North-west

Salinity

Salinity Hazard	Type	Details	Distance (m)	Direction
-	-	-	-	-

Radon

Radon Level (Bq/m <sup>3</sup> )	Distance (m)	Direction
8	0.0	Onsite

Typical radon levels in Australia are low and the values shown are the average values for each census district. For specific location, factors such as the local geology and house type could lead to different values. (ARPANSA).

## 1.4b ACID SULFATE SOIL

Map 1.4b (500m Buffer)

### State and Local Acid Sulfate Soil Registers

Name	Classification	Description	Distance (m)	Direction
Class 5	Acid Sulfate Soils	Acid sulfate soils are not typically found in Class 5 areas. Areas classified as Class 5 are located within 500 metres on adjacent class 1,2,3 or 4 land.   Development consent requirement: Works within 500 metres of adjacent Class 1, 2a, 2b, 3 or 4 land that is below 5 metres Australian Height Datum and by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2a, 2b, 3 or 4 land.	0.0	Onsite
Class 4		Acid sulfate soils in a class 4 area are likely to be found beyond 2 metres below the natural ground surface.   Development consent requirement: Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.	104.6	North-west

To ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage, development consent may be required for the carrying out of works within areas and land shown on the Acid Sulfate Soils Map.

### National Acid Sulfate Soil Register

Name	Classification	Description	Distance (m)	Direction
Bn(p4)	ASS in inland lakes, waterways, wetlands and riparian zones	Low Probability of occurrence	0.0	Onsite
Ag(p-)	ASS in floodplains	High Probability of occurrence	104.6	North-west

Source: ASRIS Atlas of Australian Sulfate Soils (CSIRO). Acid Sulfate Soils (ASS) are all those soils in which sulfuric acid may be produced, is being produced, or has been produced in amounts that have a lasting effect on main soil characteristics.

## 1.5 GEOLOGY AND TOPOGRAPHY

Map 1.5 (500m Buffer)

### Geology

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
Newcastle Coalfield 100K, modified by Lower NE RFA	Pto	<Null>	Lopingian	Tomago Coal Measures	Sandstone	Very fine- to medium-grained grey lithic sandstone, (sporadically interbedded with) laminated to carbonaceous shale and mudstone, siltstone, coal with	0.0	Onsite

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
						sporadic interbeds of carbonaceous shale, claystone, sideritic bands, rare pebble paraconglomerate		
	QH_af	Alluvial floodplain deposits	Holocene	Alluvial floodplain deposits	Clastic sediment	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	70.2	North-west
	QP_at	Alluvial terrace deposits	Holocene	Alluvial terrace deposits	Clastic sediment	Silt, clay, (fluvially-deposited) fine- to medium-grained quartz-lithic sand, polymictic gravel.	122.4	North-west

#### Naturally Occurring Asbestos Potential (NOA)

Category	On the Property?	Within Buffer?
Not identified	-	-

#### Topography

Topography (onsite)	14-30 mAHD
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## Section 2 Hydrogeology



### 2.1 HYDROGEOLOGY AND GROUNDWATER BORES

Map 2.1 (2000m Buffer)

	On the Property?	Within Buffer?
<b>Aquifer Type</b>	Porous, extensive highly productive aquifers	Porous, extensive highly productive aquifers
<b>Drinking Water Catchments</b>	Not identified	Not identified
<b>Protected Riparian Corridor</b>	Not identified	Hunter River Wallis Creek
<b>UPSS Environmentally Sensitive Zone</b>	Hunter River	Hunter River
<b>Wetlands</b>	Not identified	Estuarine Wetland

#### Groundwater Bores

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity (mg/l)	Yield (L/s)	Distance (m)	Direction
26	GW019629	Unknown	1/03/1963	<Null>	6.1	<Null>	<Null>	<Null>	782.0	North-west
25	GW065476	Irrigated agriculture	1/01/1987	<Null>	13.0	<Null>	<Null>	<Null>	1003.8	West
11	GW202610	Monitoring	23/05/2012	0.0	6.0	6.18	<Null>	<Null>	1041.4	South-west
12	GW202609	Monitoring	22/05/2012	0.0	12.5	7.77	<Null>	<Null>	1043.5	South-west
10	GW202608	Monitoring	22/05/2012	0.0	7.5	5.63	<Null>	<Null>	1044.0	South-west
27	GW201107	Irrigated agriculture	1/07/1987	13.0	13.0	6	<Null>	7	1045.7	West
7	GW203477	Irrigation	1/01/1980	0.0	6.5	5	<Null>	<Null>	1052.5	North-west

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity (mg/l)	Yield (L/s)	Distance (m)	Direction
9	GW202611	Monitoring	23/05/2012	10.0	10.0	5.51	<Null>	<Null>	1062.0	South-west
4	GW202612	Monitoring	24/05/2012	7.0	7.0	4.24	<Null>	<Null>	1068.0	South-west
5	GW202613	Monitoring	24/05/2012	6.0	6.0	4.45	<Null>	<Null>	1099.0	South-west
6	GW202614	Monitoring	24/05/2012	0.0	9.5	4.71	<Null>	<Null>	1100.4	South-west
2	GW202476	Monitoring	25/05/2012	4.0	4.0	1.06	<Null>	<Null>	1133.4	South-west
3	GW202477	Monitoring	25/05/2012	6.0	6.0	2.71	<Null>	<Null>	1183.1	South-west
1	GW068666	Monitoring	<Null>	12.5	<Null>	6	<Null>	<Null>	1218.7	West
22	GW078839	Monitoring	21/07/1993	23.7	23.7	9.69	<Null>	0.5	1521.2	South-east
23	GW078838	Monitoring	20/07/1993	26.7	26.7	13.83	<Null>	0.2	1601.9	South-east
24	GW078842	Monitoring	18/07/1996	24.0	24.0	83	<Null>	<Null>	1611.4	South-east
18	GW078841	Monitoring	18/07/1996	29.6	29.6	85	<Null>	<Null>	1673.1	South-east
19	GW078840	Monitoring	22/07/1993	32.8	32.8	17.02	<Null>	0.7	1783.8	South-east
8	GW202163	Irrigation,stock	3/03/2008	12.0	12.0	5.5	Good	3	1806.6	North
16	GW047691	Irrigated agriculture	1/05/1980	10.5	10.5	<Null>	<Null>	<Null>	1813.5	West
17	GW014307	Irrigated agriculture	1/10/1956	9.1	9.1	2.9	<Null>	1.263	1833.2	North-west
13	GW027203	Irrigated agriculture	1/05/1967	9.1	9.1	3.7	<Null>	<Null>	1893.6	North-west
21	GW078843	Monitoring	14/11/1996	11.2	11.2	<Null>	<Null>	<Null>	1909.4	South-east
20	GW078844	Monitoring	15/11/1996	24	24	18.99	<Null>	<Null>	1923.3	South-east
15	GW053069	Irrigated agriculture	<Null>	13	12	9	Poor	<Null>	1924.3	North-east
14	GW029701	Unknown	<Null>	10.4	10.4	3.7	<Null>	<Null>	1935.6	North-east

### Groundwater Bores Driller Lithology Details

Groundwater Bore ID	From Depth - To Depth (m)	Lithology	Distance (m)	Direction
GW019629	#N/A		782.0	North-west
GW065476	#N/A		1003.8	West
GW202610	#N/A		1041.4	South-west
GW202609	#N/A		1043.5	South-west
GW202608	#N/A		1044.0	South-west
GW201107	#N/A		1045.7	West
GW203477	#N/A		1052.5	North-west
GW202611	#N/A		1062.0	South-west
GW202612	#N/A		1068.0	South-west
GW202613	#N/A		1099.0	South-west
GW202614	#N/A		1100.4	South-west
GW202476	#N/A		1133.4	South-west

Groundwater Bore ID	From Depth - To Depth (m)	Lithology	Distance (m)	Direction
GW202477	#N/A		1183.1	South-west
GW068666	0m-1m Top soil 4m-6m Heavy clay 6m-12m Water bearing sand & gravel		1218.7	West
GW078839	0m-1m Fill material 1m-4m Clay/shale, cream, plastic 4m-8m Shale, dark grey 8m-10m Sandstone, grey, fine 10m-15.5m Siltstone, grey, fine 15.5m-16m Coal, black 16m-20m Shale, brown to light brown 20m-22m Sandstone, grey, medium 22m-22.5m Coal, black 22.5m-23.3m Sandstone, grey, medium 23.3m-23.7m Siltstone, grey, fine		1521.2	South-east
GW078838	0m-0.5m Topsoil, clayey 0.5m-3.5m Sandstone, yellow with iron stains 3.5m-5m Shale/siltstone, dark grey, fine, laminitic 5m-6.5m Sandstone, yellow orange 6.5m-6.8m Coal 6.8m-9m Shale/claystone, grey 9m-10m Siltstone, light grey 10m-20m Shale, grey to dark grey 20m-26.7m Sandstone, grey, hard, carbonaceous		1601.9	South-east
GW078842	0m-0.1m Fill 0.1m-3m Clay 3m-8.5m Claystone 8.5m-9m Coal 9m-14.5m Siltstone 14.5m-17.8m Sandstone 17.8m-22.5m Mudstone 22.5m-24m Coal/mudstone		1611.4	South-east
GW078841	0m-1.2m Silty clay 1.2m-2.5m Clay 2.5m-3m Clay 3m-4m Clay 4m-9.8m Siltstone 9.8m-10.3m Coal 10.3m-14.5m Claystone 14.5m-14.6m Coal 14.6m-15m Clay 15m-17.5m Siltstone 17.5m-23.5m Siltstone 23.5m-29.5m Coal 29.5m-29.6m Clay		1673.1	South-east
GW078840	0m-2.5m Clay, grey brown 2.5m-4.7m Siltstone, cream, soft 4.7m-5.2m Coal, black 5.2m-5.5m Siltstone/claystone 5.5m-6.5m Shale, dark grey, carbonaceous 6.5m-8m Sandstone, light grey 8m-9m Shale, grey 9m-10.5m Siltstone, grey 10.5m-11.5m Shale, grey 11.5m-17m Siltstone, grey, layered 17m-22m Sandstone, brown grey 22m-28.5m Coal, black 28.5m-29m Sandstone, grey 29m-30.5m Coal, black, hard 30.5m-32m Siltstone, grey 32m-32.8m Coal		1783.8	South-east
GW202163	#N/A		1806.6	North
GW047691	0m-2m Topsoil 2m-6m Soil clay 6m-10.5m Gravel		1813.5	West
GW014307	0m-2.74m Silt sandy 2.74m-5.18m Soil black		1833.2	North-west

Groundwater Bore ID	From Depth - To Depth (m)	Lithology	Distance (m)	Direction
	5.18m-6.4m Clay 6.4m-9.14m Sand water supply			
GW027203	0m-3.05m Soil 3.05m-4.88m Mud black 4.88m-9.14m Sand water bearing		1893.6	North-west
GW078843	0m-4m Fill 4m-5m Silty clay 5m-7.5m Silty clay 7.5m-10m Siltstone 10m-11.2m Silty clay		1909.4	South-east
GW078844	0m-1m Fill 1m-3m Silty clay 3m-5m Silty clay 5m-6m Sandstone 6m-10m Siltstone 10m-15m Sandstone 15m-19m Siltstone 19m-24m Coal		1923.3	South-east
GW053069	0m-2m Topsoil 2m-4m Soil black 4m-9m Mud 9m-12m Gravel water supply 12m-13m Mud		1924.3	North-east
GW029701	0m-3.05m Soil 3.05m-7.32m Clay cryptocrystalline 7.32m-10.36m Sand coarse water bearing		1935.6	North-east

## 2.2 HYDROGEOLOGY AND OTHER BOREHOLES

### Map 2.2 (500m Buffer)

	On the Property?	Within Buffer?
Groundwater Vulnerability	Not identified	Not identified
Groundwater Exclusion Zones <sup>1,2</sup>	Not identified	Not identified
Hydrogeologic Unit	Palaeozoic and Pre-Cambrian Fractured Rock Aquifers (low permeability)	Surficial Sediment Aquifer (porous media - unconsolidated) Palaeozoic and Pre-Cambrian Fractured Rock Aquifers (low permeability)

<sup>1</sup> - Botany Groundwater Management Zones (BGMZ): Zone 1 - the use of groundwater remains banned; Zones 2 to 4 - domestic groundwater use is banned, especially for drinking water, watering gardens, washing windows and cars, bathing, or to fill swimming pools.

<sup>2</sup> - Willamtown Groundwater Management Zones (WGMZ): Primary Management Zone - this area has significantly higher levels of PFAS detected and therefore, the strongest advice applies. Secondary Management Zone - this area has some detected levels of PFAS; Broader Management Zone - the topography and hydrology of the area means PFAS detections could occur now and into the future.

### Groundwater Dependent Ecosystems (GDE)

	On the Property?	Within Buffer?
Aquatic (Surface)	Not identified	Not identified
Terrestrial (Subsurface)	Not identified	Not identified

Aquatic - Ecosystems that rely on the Surface expression of groundwater.

Terrestrial - Ecosystems that rely on the Subsurface expression of groundwater.

## Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes)

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
28197	Mineral Exploration	EAST MAITLAND GAOL	NSW Mines Department	01/01/1885	227.3	18.0	South-east
COAL_DMED GAOLD1	Mineral Exploration	DPI Minerals Borehole Register - Department Of Mineral Resources,	Department Of Mineral Resources,		227.3	18.7	South-east
GT0001772	Intrusive Investigation	A collection of NSW geotechnical reports as part of the NSW Government Geotechnical Report Database Project (GGRD).	Drilling, Soil Sample Analysis located at Maitland Gaol geotechnical investigation - Geotechnical Centre - 18 April 1		0.0	37.2	West
TP118	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		1.8	284.7	North-west
TP117	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		2.2	296.8	North-west
TP207	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	303.5	North-west
BH209	Borehole	Proposed Bridge over Northern Railway Maitland	RMS		22.4	308.0	North-west
CPTu209	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		15.9	308.9	North-west
CPTu213	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		18.0	309.2	North-west
CPTu212	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		20.8	310.0	North-west
TP212	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		1.8	313.1	North-west
TP208	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		1.8	314.1	North-west
CPTu211	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		14.4	314.7	North-west
TP206	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	315.2	North-west
TP209	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.1	316.8	North-west
CPTu207	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		15.6	321.5	North-west
CPTu210	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		9.4	324.8	North-west
BH208	Borehole	Proposed Bridge over Northern Railway Maitland	RMS		23.3	334.2	North-west

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
TP211	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		0.9	335.9	North-west
CPTu208	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		17.7	336.2	North-west
TP205	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	337.3	North-west
BH206	Borehole	Proposed Bridge over Northern Railway Maitland	RMS		26.3	345.1	North-west
CPTu206	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		17.3	345.1	North-west
TP116	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		2.2	350.1	North-west
ABH7	Borehole	Proposed MR101 - Third Hunter River Crossing between Melbourne St and Pitnacree Rd	RMS		25.5	353.1	North-west
TP204	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	357.6	North-west
BH205	Borehole	Proposed Bridge over Northern Railway Maitland	RMS		17.0	358.8	West
CPTu205	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		17.2	360.1	West
ABH6	Borehole	Proposed MR101 - Third Hunter River Crossing between Melbourne St and Pitnacree Rd	RMS		30.0	363.7	North-west
CPT03	Intrusive Investigation	Proposed Hunter River Crossing, Elizabeth St East Maitland	RMS	12/01/2007	17.7	368.3	North-west
CPT02	Intrusive Investigation	Proposed Hunter River Crossing, Elizabeth St East Maitland	RMS	12/01/2007	20.0	372.7	North-west
TP210	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	372.9	North
TP203	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	373.8	West
CPTu203	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		16.4	376.1	West
ABH5	Borehole	Proposed MR101 - Third Hunter River Crossing between Melbourne St and Pitnacree Rd	RMS		33.0	379.3	North-west
CPT01	Intrusive Investigation	Proposed Hunter River Crossing, Elizabeth St East Maitland	RMS	12/01/2007	10.0	383.1	West
TP106A	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		1.1	383.4	North-west
TP106B	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		1.1	383.4	North-west

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
TP217	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		1.8	386.3	West
TP218	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		1.0	386.5	West
TP112	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		5.0	391.0	West
TP105	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		1.0	394.1	West
ABH4	Borehole	Proposed MR101 - Third Hunter River Crossing between Melbourne St and Pitnacree Rd	RMS		6.6	403.8	West
TP119	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		1.9	404.1	North
TP111	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		2.1	406.0	West
TP215	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		1.1	406.6	West
TP214	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		0.9	407.6	West
TP216	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		0.9	408.0	West
CPTu204	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		15.8	411.0	West
TP201	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	413.0	West
TP113	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		1.4	414.7	West
CPTu201	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		15.4	416.1	West
TP202	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.1	417.9	West
CPTu202	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		15.6	437.4	North-west



## Section 3 Environmental Registers, Licences and Incidents



### 3.1 CONTAMINATED LAND PUBLIC REGISTER

Map 3.1 (1000m Buffer)

#### Contaminated Sites

Register Type	Site Name	Address	Description	Details	Distance (m)	Direction
EPA Notified Contaminated Sites	Caltex East Maitland Service Station	Newcastle Road, Corner William STREET EAST MAITLAND	Service Station	Regulation under CLM Act not required	687.3	South-west
EPA Notified Contaminated Sites	United Service Station East Maitland	164 (also known as 250) Newcastle Street, EAST MAITLAND	Service Station	Regulation under CLM Act not required	722.7	South
EPA Notified Contaminated Sites	Former Gasworks Site	Corner Melbourne Street and Brisbane Street, EAST MAITLAND	Gasworks	Regulation under CLM Act not required	999.0	South-west
EPA Record of Notices	Former Gasworks Site	Corner Melbourne Street and Brisbane Street, EAST MAITLAND	Gasworks	Notices relating to this site (2 former)	999.0	South-west

*If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.*

Table 3.1.1 Contaminated Land Public Register		
State	Regulatory Body	Information included in this search (by state)
ACT	EPA (Environment Protection Authority)	Contaminated Land Search Register of Contaminated Sites
NSW	EPA (Environment Protection Authority)	Sites Notified as Contaminated



Table 3.1.1 Contaminated Land Public Register		
		Records of Notices
NT	EPA (Environment Protection Authority)	Contaminated Land Audit Pollution Abatement Notice
QLD	DES (Department of Environment and Science)	Environmental Management Register (EMR) Contaminated Land Register (CLR)
SA	EPA (Environment Protection Authority)	Site Contamination Index
TAS	EPA (Environment Protection Authority)	Regulated Sites and Premises Lutana and Parts of Hobarts Eastern Shore
VIC	EPA (Environment Protection Authority)	Priority Sites Register Pollution Abatement Notice
WA	DWER (Department of Water and Environmental Regulation)	Contaminated Sites Database

This search contains information retrieved from the relevant state authority, agency/department, or government authority that notifies and identifies contaminated land. The list only contains contaminated sites that the regulatory body is aware of or that have been notified by owners or occupiers as contaminated land. The sites are recorded on the register at various stages of the assessment and/or remediation process. If a site is not on the list, it does not necessarily mean the site is not contaminated.

### 3.2 LICENCES, APPROVALS & ASSESSMENTS

### Map 3.2 (500m Buffer)

#### Licences

Licence N°	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direct
3957	No longer in force	FORESTRY CORPORATION OF NEW SOUTH WALES	Lower North East Region (L.N.E.R) Means State Forests And Crown - Timber Lands (ex. Plantations)	WITHIN THE L.N.E.R. SHOWN ON MAP 1 TO THE NSW L.N.E.R. FOREST AGREEMENT GRANTED ON THE 5 MARCH 1999, KEMPSEY, NSW 2440	Logging operations	0.0	Not mapped
4017	No longer in force	FORESTRY CORPORATION OF NEW SOUTH WALES	Upper North East Region (L.N.E.R) Means State Forests And Crown - Timber Lands (ex. Plantations)	WITHIN THE U.N.E.R. SHOWN ON MAP 1 TO THE NSW U.N.E.R. FOREST AGREEMENT GRANTED ON THE 5 MARCH 1999., COFFS HARBOUR, NSW 2450	Logging operations	0.0	Not mapped
12439	Surrendered	STATE OF NEW SOUTH WALES (Department of Primary Industries - Lands)	STATE OF NEW SOUTH WALES (Department of Primary Industries - Lands)	STATE OF NEW SOUTH WALES (Department of Primary Industries - Lands)	Other activities	0.0	Not mapped

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

\* Not mapped - Licences that are applied to larger areas and/or without specific definition; such as waterways, forests etc will still be identified in the search results but will not be show within the map.

## Audits

N°	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direction
-	Not identified	-	-	-	-	-	-

*If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.*

## Clean Up, Penalty Notices and Orders

N°	Type	Licence holder	Location Name	Premise Address	Details	Dist. (m)*	Direction
-	-	-	-	-	-	-	-

*If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.*

### 3.3a SITES REGULATED BY OTHER JURISDICTIONAL BODY

Map 3.3a (2000m Buffer)

#### Contaminated Legacy Areas

Site Name	Description	Distance (m)	Direction
Not identified	-	-	-

Includes known contaminated areas such as James Hardies Asbestos waste legacy areas, Pasminco Smelter and Uranium processing site.

#### Defence, Military Sites and UXO Areas

Site name	Type*	Details	Distance (m)	Direction
Maitland	Unexploded Ordnance (UXO)	This site was used for Military Training and Camps during WWII.	0.0	Onsite

\*RCIP (Regional Contamination Investigation Program). UXO (Unexploded Ordnance Areas)

#### Former Gasworks Sites

Site name	Description	Distance (m)	Direction
Former Gaswork	Although both Tuck and the Maitland Gas Company were authorised to supply East and West Maitland with gas, a municipal works was commenced in East Maitland in 1887. Dissatisfaction with the performance of the East Maitland gasworks led the council, in 1911, to seek the expert advice of J. McKenzie, engineer to the Newcastle Gas Company, as well as opinions from other gas enterprises in New South Wales. All agreed that East Maitland gasworks was old-fashioned and inefficient. Council was advised to redesign the retort benches so they could be serviced by fewer stokers; spend £1,000 on renewing the mains; and upgrade the street lights from flat-flame to the new incandescent burners. Seriously damaged by floods in 1949 and 1955 the East Maitland works needed to be replaced by another on higher ground. At the same time, the Maitland council undertaking wanted to take it over. At the suggestion of the state government both the Maitland works were replaced in 1960 by a new works built at Cessnock.	997.8	South-west

#### PFAS Sites

Site name	Description	Source	Distance (m) *	Direction
Not identified	-	-	-	-

### 3.3b OTHER POTENTIAL POLLUTION SOURCES

Map 3.3b (500m Buffer)

#### Derelict Mines and Quarries

Site name	Description	Distance (m)	Direction
Not identified	-	-	-

#### Historical Landfills

Site name	Description	Distance (m)	Direction
Not identified	-	-	-

**National Pollutant Inventory (NPI)**

Facility name	Address	Primary ANZSIC Class	Latest report	Distance (m)	Direction
Not identified	-	-	-	-	-



## Section 4 Potentially Contaminated Areas



### 4.1 POTENTIALLY CONTAMINATING ACTIVITIES (PCA)

Map 4.1 (200m Buffer)

#### Industries, businesses and activities that may cause contamination

Map ID	Site name	Category	Location	Status*	Dist. (m)	Direction
3	Rail Corridor	Rail Industry and Associated Activities	East Maitland NSW 2323	Current	115.4	South-west

\*Status:

Data is current as when this report was created.

The operational status of the business is determined using the available data sources and does not indicate real-time conditions at the site.

Current: business is operating on the day this report was issued.

Former: business that have been closed or discontinued within 2 years from the date of this report.

#### Categories included in this search. (Notifiable activities)

Abattoirs	Explosives and Dangerous Goods	Paint Industries
Abrasive Blasting	Extractive Industries	Petrol Stations
Agriculture / Horticulture	Fire and Rescue	Pharmaceuticals
Airports	Food Manufacturing	Port and Marina Operations
Asbestos	Foundry, Smelting or Refining	Power Plants
Asphalt or Bitumen	Fuel Terminals & Depots	Printing and Photography
Batteries	Glass, Ceramics and Plastic	Rail Industry and Associated Activities
Breweries / Distilleries	Gun, Pistol or Rifle Ranges	Rubber and Tyre
Cement, Concrete or Lime	Hospitals and Research Facilities	Storage Tanks
Cemeteries	Landfill Sites	Substations and Switching Stations
Chemicals	Livestock Dips	Textiles and Tannery
Coal Yards	Mechanical and Automotive	Timber, Pulp and Paper Works
Depots and Storage Yards	Metal Fabrication and Treatments	Waste and Recycling Facilities
Dry Cleaners	Oil and Gas	Wastewater Treatment Facilities
Electrical or Electrical Components	Other Infrastructure Facilities	-

Industries, businesses, and activities identified as having an increased likelihood of causing contamination.

The industries and business activities listed above have been identified as having an increased likelihood of causing contamination and have been identified through published state and national guidelines and regulations. These industries are noted due to their potential to store or use substances that could cause contamination to the surrounding environment if not managed appropriately. The identification of these activities does not imply the presence of contamination at the site.

The records identified are based on the reported business activity and have not been assessed based on any current or previous site inspection. Please note that records not identified within this section (due to error or unforeseen omission) does not necessarily mean that the screened area is not potentially contaminated or free of any risks.

## 4.2 HISTORICAL BUSINESS DIRECTORIES

(not mapped)

### 1930 Historical Business Data

Activity	Name	Address	Positional accuracy <sup>1</sup>	Distance (m)	Direction
Not identified	-	-	-	-	-

### 1940 Historical Business Data

Activity	Name	Address	Positional accuracy <sup>1</sup>	Distance (m)	Direction
Not identified	-	-	-	-	-

### 1950 Historical Business Data

Activity	Name	Address	Positional accuracy <sup>1</sup>	Distance (m)	Direction
Not identified	-	-	-	-	-

### 1965 Historical Business Data

Activity	Name	Address	Positional accuracy <sup>1</sup>	Distance (m)	Direction
Not identified	-	-	-	-	-

### 1970 Historical Business Data

Activity	Name	Address	Positional accuracy <sup>1</sup>	Distance (m)	Direction
Butter Factory Engineers	Greedy C J	4 Clara, East Maitland,NSW	Address	171.1	East
Builders & Contractors	Smithwaite W	77 Narang, East Maitland,NSW	Address	177.3	South-east

### 1980 Historical Business Data

Activity	Name	Address	Positional accuracy <sup>1</sup>	Distance (m)	Direction
Not identified	-	-	-	-	-

### 1990 Historical Business Data

Activity	Name	Address	Positional accuracy <sup>1</sup>	Distance (m)	Direction
Not identified	-	-	-	-	-

### 2005 Historical Business Data

Activity	Name	Address	Positional accuracy <sup>1</sup>	Distance (m)	Direction
Safety Equipment & Accessories	Maitland Safety Training Services	7 John St, EAST MAITLAND,NSW,2323	Address	24.7	North-west
Painters & Decorators	Rite Price Painting Service	16 Lindesay St, MAITLAND,NSW,2320	Address	37.8	North-east
Building Contractors-- Alterations & Repairs	Lantry Gary	5 Davidson St,EAST MAITLAND,NSW,2323	Address	106.0	East

Activity	Name	Address	Positional accuracy <sup>1</sup>	Distance (m)	Direction
Hot Water Systems; Plumbers & Gasfitters	BRT Plumbing Pty Ltd	1 Davidson St,EAST MAITLAND,NSW,2323	Address	135.8	East

#### 2010 Historical Business Data

Activity	Name	Address	Positional accuracy <sup>1</sup>	Distance (m)	Direction
Not identified	-	-	-	-	-

#### 2015 Historical Business Data

Activity	Name	Address	Positional accuracy <sup>1</sup>	Distance (m)	Direction
Not identified	-	-	-	-	-

Land Insight uses a number of address geocoding techniques and has characterised them based on completeness (match rates) and positional accuracy. When a historical street address is incomplete or a match is not found, a record identified as being in the surrounding area will be included for reference and the accuracy of the data is approximate only. An explanation of the positional accuracy records is defined in the table below.

Historical data positional accuracy and georeferencing results explanation		
Positional accuracy	Georeferenced	Description
Address	Located to the address level	<i>When street address and names fully match.</i>
Street	Located to the street centroid	<i>When street names match but no exact address was found. Location is approximate.</i>
Place	Located to the structure, building or complex	<i>When building, residential complex or structure name match but no exact address was found. Location is approximate.</i>
Suburb	Located to the suburb area	<i>When suburb name match but no exact address was found. Location is approximate.</i>

The data used in this section was extracted from range of historical commercial trade directories and business listings. The business addresses were geocoded using historical information and the accuracy of the data may vary due to changes to the physical address at a given locality over time or the quality of the original records. From 2005, the historical business records in this section are considered more accurate as information was extracted from digital directories with geographic coordinate location information available. On this basis, reliance on the historic listing data should be considered when assessing the risk of contamination from an activity at the site. The presence of a business listing does not definitively confirm the actual activity that has occurred at the site. For more information on how these records were geocoded and the methodology used by Land Insight, contact us at [info@landinsight.co](mailto:info@landinsight.co).

Historical business directory listings have been filtered to match activities and industries identified as PCAs in Section 4.2. Please note that any record not identified within this section (due to error or unforeseen omission) does not necessarily mean that the screened area is not potentially contaminated or free of any risks.





## Section 5 Natural Hazards



### 5.1 Fire Hazard

Map 5.1 (500m Buffer)

#### Bushfire Prone Areas

Category	Type	Details	Distance (m)	Direction
Bushfire Prone Area	Vegetation Buffer	Potential Impact Area	58.5	North-west
Bushfire Prone Area	Vegetation Category 3	Medium Risk Area	89.0	North-west

#### Bushfire History

Type	Season	Details	Distance (m)	Direction
Not identified			-	-

### 5.2 Flood and Erosion Hazards

Map 5.2 (500m Buffer)

#### Erosion Hazard

Category	Type	Details	Distance (m)	Direction
Landslip Erosion Risk	Very slight to negligible limitations	Very Low	0.0	Onsite
Water Erosion Risk	Moderate limitations	Moderate	0.0	Onsite
	Very slight to negligible limitations	Very Low	97.8	North-west
Wind Erosion Risk	Moderate limitations	Moderate	0.0	Onsite

Category	Type	Details	Distance (m)	Direction
	Slight but significant limitations	Low	97.8	North-west

## Flood Hazard

Category	Type	Details	Distance (m)	Direction
Flood Planning Area	Flood Prone Land	Maitland Local Environmental Plan 2011	58.7	North-west

### Generalised flood information definitions and explanations

**Annual Exceedance Probability (AEP)** - The probability of a flood event of a given size occurring in any one year, usually expressed as a percentage annual chance

0.2%AEP	A flood event of this size is considered rare but may still occur. A flood of size or larger has a 1 in 500 chance or a 0.2% probability of occurring in any year
1% AEP	A flood of this size or larger has a 1 in 100 chance or a 1% probability of occurring in any year
2% AEP	A flood of this size or larger has a 1 in 50 chance or a 2% probability of occurring in any year.
5% AEP	A flood of this size or larger has a 1 in 20 chance or a 5% probability of occurring in any year
20%AEP	A flood of this size or larger has a 1 in 5 chance or a 20% probability of occurring in any year.

**Average Recurrence Interval (ARI).** The long-term average number of years between the occurrence of a flood as big as, or larger than, the selected event. For example, floods reaching a height as great as, or greater than, the 20 year ARI flood event will occur on average once every 20 years

**Flood Liable Land** - Synonymous with flood prone land, i.e. land susceptible to flooding by the Probable Maximum Flood (PMF) event. Note that the term flood liable land covers the whole floodplain, not just the part below the flood planning level

**Flood Planning Area (FPA)** - Councils develop Flood Planning Areas (FPAs) as part of Flood Overlay mapping to guide future building and development in flood prone areas. The FPAs are designed to recognise the flood hazard for different flooding types.

**Flood Hazard** - Flood hazard is a combination of frequency of flooding, the flood depth, and the speed or velocity at which the water can travel.

**Probable Maximum Flood (PMF)** - The largest flood that could conceivably be expected to occur at a particular location, usually estimated from probable maximum precipitation. The PMF defines the maximum extent of flood prone land, that is, the floodplain. It is difficult to define a meaningful Annual Exceedance Probability for the PMF, but it is commonly assumed to be of the order of  $10^4$  to  $10^7$  (once in 10,000 to 10,000,000 years)



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# Annex D



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322  
 Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH1**

UTM : 56H	Driller Rig : Ute Mounted Drill Rig	Job Number : E0076
Easting : 367858.0	Driller Supplier : Hunter Civilab	Client : Maitland City Council
Northing : 6376131.8	Logged By : Lauren Kidd	Project : Maitland Gaol Redevelopment
RL : Not Surveyed	Reviewed By : Jake Duck	Location : Maitland Gaol
Total Depth : 0.4m	Date : 19/06/2023	Loc Comment :

Water	Samples	Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks
	ES						
			[Cross-hatched pattern]	FILL: silty SAND, fine grained, brown.	D	Fill	
		0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 5.5 6		<b>BH1 refusal at 0.4m</b>			



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322

Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH2**

UTM : 56H  
 Easting : 367855.1  
 Northing : 6376165.3  
 RL : Not Surveyed  
 Total Depth : 3m

Driller Rig : Ute Mounted Drill Rig  
 Driller Supplier : Hunter Civilab  
 Logged By : Lauren Kidd  
 Reviewed By : Jake Duck  
 Date : 19/06/2023

Job Number : E0076  
 Client : Maitland City Council  
 Project : Maitland Gaol Redevelopment  
 Location : Maitland Gaol  
 Loc Comment :

Water	Samples	Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks
	ES						
				FILL: clayey SAND, fine grained, brown.	D	Fill	
		0.4		Sandy CLAY, low to medium plasticity, pale brown grey, fine grained sand.	w ≈ PL	Residual	
		0.7		Sandy CLAY, low plasticity, brown pale brown, fine grained sand.	w ≈ PL	Residual	
		1.1		Silty SAND, fine grained, orange pale brown.	D	Residual	
		1.5					
		2.0					
		2.5					
		3.0		<b>BH2 Terminated at 3m</b>			
		3.5					
		4.0					
		4.5					
		5.0					
		5.5					
		6.0					



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322

Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH3**

UTM : 56H  
 Easting : 367826.3  
 Northing : 6376114.6  
 RL : Not Surveyed  
 Total Depth : 4.7m

Driller Rig : Ute Mounted Drill Rig  
 Driller Supplier : Hunter Civilab  
 Logged By : Lauren Kidd  
 Reviewed By : Jake Duck  
 Date : 19/06/2023

Job Number : E0076  
 Client : Maitland City Council  
 Project : Maitland Gaol Redevelopment  
 Location : Maitland Gaol  
 Loc Comment :

Water	Samples	Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks
							ES
		0.02		Concrete	D	Non-Soil	
				FILL: silty to gravelly SAND, fine to coarse grained, fine sized gravel, brown with red and pale grey.		Fill	
		0.5					
		0.8					
		1		FILL: sandy CLAY, medium grained sand, medium to high plasticity, grey and pale grey with brown.	w ≈ PL	Fill	
		1		FILL: silty CLAY, high plasticity, grey and dark grey.	w ≈ PL	Fill	
		1.5					
		2		As above, but with fine grained sand.	w ≈ PL	Fill	
		2.5					
		3					
		3.5		Clayey SAND, fine grained, pale brown and brown.	M	Residual	
		4					
		4.5		Silty SAND, fine to medium grained, orange and brown, (extremely weathered material)	D	Residual	
				<b>BH3 refusal at 4.7m</b>			
		5					
		5.5					
		6					



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322

Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH4**

UTM : 56H  
 Easting : 367823.9  
 Northing : 6376149.6  
 RL : Not Surveyed  
 Total Depth : 4m

Driller Rig : Ute Mounted Drill Rig  
 Driller Supplier : Hunter Civilab  
 Logged By : Lauren Kidd  
 Reviewed By : Jake Duck  
 Date : 19/06/2023

Job Number : E0076  
 Client : Maitland City Council  
 Project : Maitland Gaol Redevelopment  
 Location : Maitland Gaol  
 Loc Comment :

Water	Samples	Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks
	ES						General
		0.1		FILL: clayey to silty SAND, fine grained, brown.	D	Fill	
				Sandy CLAY, low plasticity, brown and pale brown, fine grained sand.	w = PL	Residual	DUP1
		1.2		Silty SAND, fine grained, orange and pale brown.	D	Residual	
		2.5		As above, but with low plasticity clay.	D	Residual	
		4		<b>BH4 Terminated at 4m</b>			





**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322

Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH5**

UTM : 56H  
 Easting : 367795.3  
 Northing : 6376115.3  
 RL : Not Surveyed  
 Total Depth : 4.5m

Driller Rig : Ute Mounted Drill Rig  
 Driller Supplier : Hunter Civilab  
 Logged By : Lauren Kidd  
 Reviewed By : Jake Duck  
 Date : 19/06/2023

Job Number : E0076  
 Client : Maitland City Council  
 Project : Maitland Gaol Redevelopment  
 Location : Maitland Gaol  
 Loc Comment :

Water	Samples		Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks
	ES							
			0.1		Silty SAND, fine grained, brown.	D	Residual	
			0.4		FILL: sandy GRAVEL, medium sized, medium grained sand, pale brown and grey.	D	Fill	
			0.5		FILL: silty to gravelly SAND, fine to medium grained, medium sized gravel, dark brown.	D	Fill	
			0.9		Sandy CLAY, low to medium plasticity, brown and orange, fine grained sand.	w ≈ PL	Residual	
			1.3		Silty SAND, fine grained, orange and pale brown.	D	Residual	
			2.5		Silty to sandy CLAY, low plasticity, pale grey and pale brown, fine grained sand, (extremely weathered material).	w ≈ PL	Residual	
			3.5		Silty SAND, fine grained, orange and pale brown, (extremely weathered material)	D	Residual	
			4.5		<b>BH5 Terminated at 4.5m</b>			



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322

Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH 6**

UTM : 56H  
 Easting : 367808.1  
 Northing : 6376131.5  
 RL : Not Surveyed  
 Total Depth : 2.2m

Driller Rig : Ute Mounted Drill Rig  
 Driller Supplier : Hunter Civilab  
 Logged By : Lauren Kidd  
 Reviewed By : Jake Duck  
 Date : 19/06/2023

Job Number : E0076  
 Client : Maitland City Council  
 Project : Maitland Gaol Redevelopment  
 Location : Maitland Gaol  
 Loc Comment :

Water	Samples	Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks	
	ES						General	
		0.5		FILL: gravelly SILT, fine sized gravel, non-plastic, dark brown.	w ≈ PL	Fill		
		0.8		Clayey to gravelly SILT, non-plastic, dark brown, fine sized gravel.	w ≈ PL	Residual	weathered sandstone inclusions	
		1.2		Sandy SILT, non-plastic, pale grey, fine to medium grained sand, trace fine sized gravel.	w ≈ PL	Residual		
		1.6		Silty CLAY, medium plasticity, pale grey.	w ≈ PL	Residual	organic inclusions	
		2.0		Distinctly weathered SANDSTONE, fine grained, pale brown/brown, indistinct, low strength.	D	Rock		
		2.2	<b>BH 6 Terminated at 2.2m</b>					
		2.5						
		3.0						
		3.5						
		4.0						
		4.5						
		5.0						
		5.5						
		6.0						



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322

Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH 7**

UTM : 56H  
 Easting : 367811.1  
 Northing : 6376116.0  
 RL : Not Surveyed  
 Total Depth : 4m

Driller Rig : Ute Mounted Drill Rig  
 Driller Supplier : Hunter Civilab  
 Logged By : Lauren Kidd  
 Reviewed By : Jake Duck  
 Date : 19/06/2023

Job Number : E0076  
 Client : Maitland City Council  
 Project : Maitland Gaol Redevelopment  
 Location : Maitland Gaol  
 Loc Comment :

Water	Samples	Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks
	ES						General
		0.3		FILL: gravelly SILT, fine sized gravel, non-plastic, pale grey brown.	w ≈ PL	Fill	
		0.5		FILL: gravelly SILT, fine to medium sized gravel, non-plastic, brown.	w ≈ PL	Fill	
		1.1					
		1.5		FILL: clayey to gravelly SILT, fine sized gravel, low plasticity, dark brown.	w ≈ PL	Fill	
		2.8		Silty to sandy CLAY, low to medium plasticity, grey, fine to medium grained sand.	w ≈ PL	Residual	trace roots
		3.0					
		3.5					
		4.0		CLAY, medium to high plasticity, grey.	w > PL	Residual	
		4.0		<b>BH 7 Terminated at 4m</b>			
		4.5					
		5.0					
		5.5					
		6.0					

water inflow



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322

Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH 8**

UTM : 56H  
 Easting : 367826.2  
 Northing : 6376107.7  
 RL : Not Surveyed  
 Total Depth : 4.5m

Driller Rig : Ute Mounted Drill Rig  
 Driller Supplier : Hunter Civilab  
 Logged By : Lauren Kidd  
 Reviewed By : Jake Duck  
 Date : 19/06/2023

Job Number : E0076  
 Client : Maitland City Council  
 Project : Maitland Gaol Redevelopment  
 Location : Maitland Gaol  
 Loc Comment :

Water	Samples		Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks
	ES							
			0.17		Fresh weathered CONCRETE, medium grained, pale grey and grey, distinct, high strength.	D	Non-Soil	
			0.3		FILL: silty GRAVEL, fine to medium sized, dark brown.	D	Fill	
			0.5		FILL: silty to gravelly CLAY, fine sized gravel, low to medium plasticity, dark brown red orange with grey.	w ≈ PL	Fill	
			1					
			1.5					
			2					
			2.5		Silty CLAY, medium plasticity, dark brown black grey.	w ≈ PL	Residual	
			3		As above, but pale brown.	w ≈ PL	Residual	
			3.5					
			4					
			4.5		<b>BH 8 Terminated at 4.5m</b>			
			5					
			5.5					
			6					



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322

Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH9**

UTM : 56H  
 Easting : 367832.4  
 Northing : 6376116.8  
 RL : Not Surveyed  
 Total Depth : 1.5m

Driller Rig : Ute Mounted Drill Rig  
 Driller Supplier : Hunter Civilab  
 Logged By : Lauren Kidd  
 Reviewed By : Jake Duck  
 Date : 19/06/2023

Job Number : E0076  
 Client : Maitland City Council  
 Project : Maitland Gaol Redevelopment  
 Location : Maitland Gaol  
 Loc Comment :

Water	Samples		Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks	
	ES							General	
			0.18		Fresh weathered CONCRETE, medium grained, grey, distinct, high strength.	D	Non-Soil		
			0.5		FILL: gravelly to none SILT, fine to medium sized gravel, non-plastic to high, dark brown.	w = PL	Fill		
			0.9		FILL: CLAY, high plasticity, pale grey.	w = PL	Fill		green staining and inorganic inclusions
			1.4		Extremely weathered SILT, non-plastic, pale brown.	w = PL	Rock		
			1.5		<b>BH9 refusal at 1.5m</b>				
			2						
			2.5						
			3						
			3.5						
			4						
			4.5						
			5						
			5.5						
			6						



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322

Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH10**

UTM :	Driller Rig : Ute Mounted Drill Rig	Job Number : E0076
Easting : 367829.1	Driller Supplier : Hunter Civilab	Client : Maitland City Council
Northing : 6376124.4	Logged By : Lauren Kidd	Project : Maitland Gaol Redevelopment
RL : Not Surveyed	Reviewed By : Jake Duck	Location : Maitland Gaol
Total Depth : 3m	Date : 19/06/2023	Loc Comment :

Water	Samples	Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks
	ES						General
		0.1		Sandy SILT, non-plastic, dark brown, fine to medium grained sand.	w ≈ PL	Topsoil	
				FILL: silty to gravelly CLAY, fine to medium sized gravel, low to medium plasticity, dark brown.	w ≈ PL	Fill	
		0.4					
		0.5		FILL: silty to sandy GRAVEL, fine to medium sized, fine to medium grained sand, brown.	D	Fill	
		1					
		1.4					
		1.5		FILL: silty CLAY, low to medium plasticity, grey brown.	w ≈ PL	Fill	weathered sandstone inclusions
		1.5		Silty CLAY, low to medium plasticity, pale brown/brown.	w ≈ PL	Residual	
		2					
		2.5					
		3		<b>BH10 Terminated at 3m</b>			
		3.5					
		4					
		4.5					
		5					
		5.5					
		6					



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322  
 Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH11**

UTM : 56H  
 Easting : 367847.1  
 Northing : 6376125.9  
 RL : Not Surveyed  
 Total Depth : 5m

Driller Rig : Ute Mounted Drill Rig  
 Driller Supplier : Hunter Civilab  
 Logged By : Lauren Kidd  
 Reviewed By : Jake Duck  
 Date : 19/06/2023

Job Number : E0076  
 Client : Maitland City Council  
 Project : Maitland Gaol Redevelopment  
 Location : Maitland Gaol  
 Loc Comment :

Water	Samples		Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks
	ES							
			0.16		Fresh weathered CONCRETE, medium grained, grey, distinct, high strength.	D	Non-Soil	
					FILL: gravelly SILT, fine to medium sized gravel, non-plastic, dark brown grey.	w = PL	Fill	
			0.5					
			0.7		FILL: silty to gravelly CLAY, fine to medium sized gravel, low to medium plasticity, dark brown grey.	w = PL	Fill	
			1		FILL: silty to gravelly CLAY, fine to medium sized gravel, medium plasticity, dark grey.		Fill	
			1.2		Silty CLAY, medium plasticity, dark grey.	w > PL	Residual	
			1.5					
			2					
			2.5					
			3		Silty CLAY, low plasticity, brown grey.	w = PL	Residual	
			3.5					
			4					
			4.5		Gravelly SILT, non-plastic, pale brown, fine sized gravel.	w = PL	Residual	
			5		<b>BH11 refusal at 5m</b>			
			5.5					
			6					



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322

Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH12**

UTM : 56H  
 Easting : 367840.7  
 Northing : 6376121.4  
 RL : Not Surveyed  
 Total Depth : 3m

Driller Rig : Ute Mounted Drill Rig  
 Driller Supplier : Hunter Civilab  
 Logged By : Lauren Kidd  
 Reviewed By : Jake Duck  
 Date : 19/06/2023

Job Number : E0076  
 Client : Maitland City Council  
 Project : Maitland Gaol Redevelopment  
 Location : Maitland Gaol  
 Loc Comment :

Water	Samples		Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks	
	ES							General	
			0.18		Fresh weathered CONCRETE, medium grained, grey, distinct, high strength.	D	Non-Soil		
			0.5		FILL: gravelly SILT, fine to medium sized gravel, non-plastic, dark brown grey.	w = PL	Fill		
			0.7		FILL: silty to gravelly CLAY, fine to medium sized gravel, low to medium plasticity, dark brown grey.		Fill		green hydrocarbon staining
			1.1		FILL: silty to gravelly CLAY, medium sized gravel, low to medium plasticity, dark grey.		Fill		
			1.5						
			2						
			2.5						
			3		<b>BH12 Terminated at 3m</b>				
			3.5						
			4						
			4.5						
			5						
			5.5						
			6						





**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322  
 Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH13**

UTM : 56H	Driller Rig : Ute Mounted Drill Rig	Job Number : E0076
Easting : 367856.0	Driller Supplier : Hunter Civilab	Client : Maitland City Council
Northing : 6376141.1	Logged By : Lauren Kidd	Project : Maitland Gaol Redevelopment
RL : Not Surveyed	Reviewed By : Jake Duck	Location : Maitland Gaol
Total Depth : 3m	Date : 19/06/2023	Loc Comment :

Water	Samples	Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks
	ES						General
				FILL: gravelly SILT, fine sized gravel, non-plastic, dark brown.	w ≈ PL	Fill	DUP2 trace organic inclusions
		0.5 0.7		FILL: gravelly SILT, fine to medium sized gravel, non-plastic, dark brown.	w ≈ PL	Fill	
		1 1.5 1.6		Silty to gravelly CLAY, medium plasticity, dark grey, fine to medium sized gravel.		Residual	weathered sandstone inclusions
		3		<b>BH13 Terminated at 3m</b>			
		3.5 4 4.5 5 5.5 6					



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322

Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH14**

UTM : 56H  
 Easting : 0.0  
 Northing : 0.0  
 RL : Not Surveyed  
 Total Depth : 3m

Driller Rig : Ute Mounted Drill Rig  
 Driller Supplier : Hunter Civilab  
 Logged By : Lauren Kidd  
 Reviewed By : Jake Duck  
 Date : 19/06/2023

Job Number : E0076  
 Client : Maitland City Council  
 Project : Maitland Gaol Redevelopment  
 Location : Maitland Gaol  
 Loc Comment :

Water	Samples		Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks
	ES							General
			0.5		FILL: gravelly SILT, fine to medium sized gravel, non-plastic, dark brown.	w = PL	Fill	
			0.7		FILL: silty to gravelly CLAY, fine to medium sized gravel, low plasticity, dark brown.	w = PL	Fill	trace weathered sandstone
			1.6		Silty CLAY, medium plasticity, grey.		Residual	
			2		CLAY, low plasticity, pale brown.	w = PL	Residual	
			2.5					
			3		<b>BH14 Terminated at 3m</b>			
			3.5					
			4					
			4.5					
			5					
			5.5					
			6					



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322  
 Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH15**

UTM : Easting : 367839.8 Northing : 6376160.7 RL : Not Surveyed Total Depth : 2.5m	Driller Rig : Ute Mounted Drill Rig Driller Supplier : Hunter Civilab Logged By : Lauren Kidd Reviewed By : Jake Duck Date : 19/06/2023	Job Number : E0076 Client : Maitland City Council Project : Maitland Gaol Redevelopment Location : Maitland Gaol Loc Comment :
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Water	Samples		Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks
	ES							General
			0.3		FILL: gravelly SILT, fine to medium sized gravel, non-plastic, dark brown.	w ≈ PL	Fill	
			0.5		FILL: gravelly SILT, fine sized gravel, non-plastic, dark brown/brown.	w ≈ PL	Fill	
			1		Silty CLAY, low plasticity, pale grey pale yellow.	w ≈ PL	Residual	
			1.5					sandstone inclusions
			1.8		Extremely weathered SILT, non-plastic, pale orange pale grey.	w ≈ PL	Rock	
			2.5		<b>BH15 Terminated at 2.5m</b>			
			3					
			3.5					
			4					
			4.5					
			5					
			5.5					
			6					



**Hunter Civilab**

Unit 3, 62 Sandringham Avenue Thornton NSW 2322

Phone: (02) 4966 1844

**Engineering Log - Borehole**

**Borehole No: BH16**

UTM : 56H  
 Easting : 367837.2  
 Northing : 6376138.1  
 RL : Not Surveyed  
 Total Depth : 3m

Driller Rig : Ute Mounted Drill Rig  
 Driller Supplier : Hunter Civilab  
 Logged By : Lauren Kidd  
 Reviewed By : Jake Duck  
 Date : 19/06/2023


Job Number : E0076  
 Client : Maitland City Council  
 Project : Maitland Gaol Redevelopment  
 Location : Maitland Gaol  
 Loc Comment :

Water	Samples		Depth (m)	Graphic Log	Material Description	Moisture	Soil Origin	Remarks	
	ES							General	
			0.5		FILL: gravelly SILT, fine to medium sized gravel, non-plastic, dark brown.	w = PL	Fill		
			1.5		Silty to gravelly CLAY, low to medium plasticity, dark brown black, fine sized gravel.	w = PL	Residual		
			2.3		Clayey SILT, non-plastic, dark brown pale grey.	w = PL	Residual		sandstone inclusions
			3		<b>BH16 Terminated at 3m</b>				
			3.5						
			4						
			4.5						
			5						
			5.5						
			6						



# Annex E


Soil Screening Criteria



	Metals								TRH NEPM (2013)							BTX				PAH					
	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury	TRH C6-C10 Fraction	TRH C6-C10 minus BTEX (F1)	TRH >C10-C16 Fraction	TRH >C10-C16 - Naphthalene (F2)	TRH >C16-C34 (F3)	TRH >C34-C40 (F4)	Naphthalene	Benzene	Toluene	Ethylbenzene	Xylene Total	Naphthalene	Benzo(a)pyrene	Carcinogenic PAHs, BaP TEQ <LOR=0	Carcinogenic PAHs, BaP TEQ <LOR=OR	Carcinogenic PAHs, BaP TEQ <LOR=OR/2	Total PAH
Limit of Reporting	1	0.3	0.5	0.5	1	0.5	2	0.05	25	25	25	25	90	120	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.2	0.3	0.2	0.8
HIL D (NEPM 2013)	3000	900	3600	240000	1500	6000	400000	730														40	40	40	4000
HSL D - Soil Vapour Sand 0 - <1m (NEPM 2013)									260		NL				NL	3	NL	NL	230						
HSL D - Soil Vapour Sand 1 - <2m (NEPM 2013)									370		NL				NL	3	NL	NL	NL						
HSL D - Soil Vapour Sand 2 - <4m (NEPM 2013)									630		NL				NL	3	NL	NL	NL						
HSL D - Soil Vapour Sand 4m+ (NEPM 2013)									NL		NL				NL	3	NL	NL	NL						
HSL D - Soil Vapour Silt 0 - <1m (NEPM 2013)									250		NL				NL	4	NL	NL	NL						
HSL D - Soil Vapour Silt 1 - <2m (NEPM 2013)									360		NL				NL	4	NL	NL	NL						
HSL D - Soil Vapour Silt 2 - <4m (NEPM 2013)									590		NL				NL	6	NL	NL	NL						
HSL D - Soil Vapour Silt 4m+ (NEPM 2013)									NL		NL				NL	10	NL	NL	NL						
HSL D - Soil Vapour Clay 0 - <1m (NEPM 2013)									310		NL				NL	4	NL	NL	NL						
HSL D - Soil Vapour Clay 1 - <2m (NEPM 2013)									480		NL				NL	6	NL	NL	NL						
HSL D - Soil Vapour Clay 2 - <4m (NEPM 2013)									NL		NL				NL	9	NL	NL	NL						
HSL D - Soil Vapour Clay 4m+ (NEPM 2013)									NL		NL				NL	20	NL	NL	NL						
HSL D for Asbestos in Soil (NEPM 2013)																									
HSL D - Direct Contact (CRC Care 2011)									26,000		20,000		27,000	38,000	11,000	430	99,000	27,000	81,000	11,000					
Intrusive Maintenance Worker - Direct Contact (CRC Care 2011)									82,000		62,000		85,000	120,000		1,100	120,000	85,000	130,000	29,000					
EILs (NEPM 2013)	160				1800										370					370					
ESLs - Fine (NEPM 2013)									215		170	2500	6600		95	135	185	180							
ESLs - Coarse (NEPM 2013)									215		170	1700	3300		75	135	165	95		0.7					
Management Limits - Fine Soil (NEPM 2013)									800		1,000	5,000	10,000												
Management Limits - Coarse Soil (NEPM 2013)									700		1,000	3,500	10,000												

Sample ID	Sampled Date	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury	TRH C6-C10 Fraction	TRH C6-C10 minus BTEX (F1)	TRH >C10-C16 Fraction	TRH >C10-C16 - Naphthalene (F2)	TRH >C16-C34 (F3)	TRH >C34-C40 (F4)	Naphthalene	Benzene	Toluene	Ethylbenzene	Xylene Total	Naphthalene	Benzo(a)pyrene	Carcinogenic PAHs, BaP TEQ <LOR=0	Carcinogenic PAHs, BaP TEQ <LOR=OR	Carcinogenic PAHs, BaP TEQ <LOR=OR/2	Total PAH
BH1 0.1-0.2	19/6/2023	7	0.4	30	32	240	15	240	0.27	<25	<25	<25	<25	140	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	3.6	5.2	5.2	48	
BH2 0.2-0.3	19/6/2023	9	0.3	20	30	1600	15	240	0.23	<25	<25	33	32	580	<120	1.5	<0.1	<0.1	<0.1	<0.3	1.5	15	21	21	21	250
BH2 1.1-1.2	19/6/2023	6	<0.3	1.3	2.2	7	<0.5	5.5	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH3 0.2-0.3	19/6/2023	10	<0.3	1.3	15	5	1.5	12	0.12	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH3 1.4-1.5	19/6/2023	6	<0.3	4.5	14	35	1.6	39	0.08	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH3 3.0-3.1	19/6/2023	6	<0.3	6.5	20	36	2.4	61	0.09	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH4 0.1-0.2	19/6/2023	6	0.3	28	37	200	18	200	0.35	<25	<25	<25	<25	100	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	1.0	1.4	1.4	1.4	12
BH4 1.0-1.1	19/6/2023	3	<0.3	2.6	3.8	8	0.9	30	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH5 0.1-0.2	19/6/2023	9	<0.3	3.5	16	27	3.4	28	0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	0.1	<0.2	<0.3	0.2	1.4
BH5 0.7-0.8	19/6/2023	6	<0.3	9.2	26	490	7.6	150	0.41	<25	<25	<25	<25	210	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	1.4	2.1	2.1	2.1	18
BH5 1.3-1.4	19/6/2023	3	<0.3	2.2	2.0	8	0.7	21	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH6 0.1-0.2	19/6/2023	5	0.4	48	28	61	30	120	0.11	<25	<25	41	41	120	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	1.2	1.7	1.7	1.7	14
BH6 0.8-0.9	19/6/2023	3	<0.3	3.1	1.5	9	1.1	12	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH7 0.1-0.2	19/6/2023	9	<0.3	6.7	18	70	5.3	45	0.07	<25	<25	<25	<25	180	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	1.9	2.9	2.9	2.9	31
BH7 1.2-1.3	19/6/2023	10	<0.3	19	24	200	16	140	0.17	<25	<25	<25	<25	120	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	1.3	1.9	1.9	1.9	16
BH7 2.8-2.9	19/6/2023	5	<0.3	4.4	9.1	58	2.2	100	1.1	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH8 0.2-0.3	19/6/2023	9	<0.3	2.0	15	6	2.3	49	0.08	<25	<25	<25	<25	190	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH8 0.6-0.7	19/6/2023	7	<0.3	4.5	7.8	39	3.7	52	0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH9 0.2-0.3	19/6/2023	9	<0.3	1.6	22	6	2.3	15	0.09	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH9 0.7-0.8	19/6/2023	8	<0.3	4.4	14	46	2.0	43	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	0.1	<0.2	<0.3	<0.2	1.3
BH9 1.4-1.5	19/6/2023	8	<0.3	6.4	16	67	3.6	62	0.07	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	0.5	0.6	0.7	0.7	5.7
BH10 0.1-0.2	19/6/2023	3	<0.3	11	7.3	8	14	25	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH10 0.3-0.4	19/6/2023	9	<0.3	1.8	20	6	2.8	17	0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH10 1.0-1.1	19/6/2023	4	<0.3	3.2	4.8	20	1.3	17	0.07	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH11 0.2-0.3	19/6/2023	9	<0.3	2.0	25	6	2.6	18	0.09	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH11 0.7-0.8	19/6/2023	7	<0.3	4.2	13	39	2.1	84	0.07	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	0.1	<0.2	<0.3	<0.2	1.3
BH11 1.1-1.2	19/6/2023	12	3.7	7.3	20	160	5.2	1400	0.39	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	0.5	0.7	0.8	0.8	8.6
BH12 0.2-0.3	19/6/2023	8	<0.3	1.0	10	4	1.1	6.3	0.07	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
BH12 0.7-0.8	19/6/2023	10	0.4	6.5	12	49	4.6	140	0.08	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	0.2	0.3	0.4	0.3	2.9

Soil Screening Criteria


	OCP													OPP	PCB
	Aldrin	o,p'-DDE	o,p'-DDD	o,p'-DDT	Gamma Chlordane	Alpha Chlordane	Dieldrin	Alpha Endosulfan	Beta Endosulfan	Endrin	Heptachlor	Hexachlorobenzene (HCB)	Methoxychlor	Chlorpyrifos (Chlorpyrifos Ethyl)	Total PCBs (Arochlors)
	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
Limit of Reporting	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	1
HIL D (NEPM 2013)	45	3600	3600	3600	530	530	45	2000	2000	100	50	80	2500	2000	7
HSL B - Direct Contact (CRC Care 2011)															
Intrusive Maintenance Worker - Direct Contact (CRC EILs (NEPM 2013))				640											
ESLs - Coarse/Fine (NEPM 2013)															

Sample ID	Sampled Date	Aldrin	o,p'-DDE	o,p'-DDD	o,p'-DDT	Gamma Chlordane	Alpha Chlordane	Dieldrin	Alpha Endosulfan	Beta Endosulfan	Endrin	Heptachlor	Hexachlorobenzene (HCB)	Methoxychlor	Chlorpyrifos (Chlorpyrifos Ethyl)	Total PCBs (Arochlors)
BH1 0.1-0.2	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH2 0.2-0.3	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH2 1.1-1.2	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH3 0.2-0.3	19/6/2023	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH3 1.4-1.5	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH3 3.0-3.1	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH4 0.1-0.2	19/6/2023	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH4 1.0-1.1	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH5 0.1-0.2	19/6/2023	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH5 0.7-0.8	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH5 1.3-1.4	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH6 0.1-0.2	19/6/2023	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH6 0.8-0.9	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH7 0.1-0.2	19/6/2023	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH7 1.2-1.3	19/6/2023	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH7 2.8-2.9	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH8 0.2-0.3	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH8 0.6-0.7	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH9 0.2-0.3	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH9 0.7-0.8	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH9 1.4-1.5	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH10 0.1-0.2	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH10 0.3-0.4	19/6/2023	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH10 1.0-1.1	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH11 0.2-0.3	19/6/2023	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH11 0.7-0.8	19/6/2023	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH11 1.1-1.2	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH12 0.2-0.3	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH12 0.7-0.8	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH12 2.2-2.3	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH13 0.1-0.2	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH14 0.2-0.3	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH15 0.2-0.3	19/6/2023	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH15 1.3-1.4	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH16 0.2-0.3	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH16 1.7-1.8	19/6/2023	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Statistical Summary																
Number of Results	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
Number of Detects	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Detect	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Detect	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Average Concentration	-	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note:  
 (1) The NEPM presents a cumulative HIL for DDD, DDE and DDT (240 mg/kg). Concentrations for each of these compounds are presented separately above and conservatively assessed against the HIL.  
 (2) The NEPM presents a cumulative HIL for Aldrin and Dieldrin (6 mg/kg). Concentrations for each of these compounds are presented separately above and conservatively assessed against the HIL.  
 (3) The NEPM presents one HIL for Endosulfan (270 mg/kg). Concentrations for Alpha Endosulfan and Beta Endosulfan are presented separately above and conservatively assessed against the HIL.

## Soil Screening Criteria

	LOR	Unit	Primary Sample	QA Sample	RPD
			BH4 0.1-0.2	DUP1	
<b>TRH</b>					
TRH C6-C10 Fraction	25	mg/kg	<u>12.5</u>	<u>12.5</u>	0.0
TRH C6-C10 less BTEX	25	mg/kg	<u>12.5</u>	<u>12.5</u>	0.0
TRH >C10-C16 Fraction	25	mg/kg	<u>12.5</u>	<u>12.5</u>	0.0
TRH >C10-C16 Fraction less N	25	mg/kg	<u>12.5</u>	<u>12.5</u>	0.0
TRH >C16-C34 Fraction	90	mg/kg	<b>100</b>	<b>180</b>	-57.1
TRH >C34-C40 Fraction	120	mg/kg	<u>60</u>	<u>60</u>	0.0
Naphthalene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
<b>BTEX</b>					
Benzene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
Toluene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
Ethylbenzene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
m/p-xylene	0.2	mg/kg	<u>0.1</u>	<u>0.1</u>	0.0
o-xylene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
Total Xylenes	0.3	mg/kg	<u>0.15</u>	<u>0.15</u>	0.0
<b>Metals</b>					
Arsenic	1	mg/kg	<b>6</b>	<b>6</b>	0.0
Cadmium	0.3	mg/kg	<b>0.3</b>	<u>0.15</u>	66.7
Chromium	0.5	mg/kg	<b>28</b>	<b>21</b>	28.6
Copper	0.5	mg/kg	<b>37</b>	<b>32</b>	14.5
Lead	1	mg/kg	<b>200</b>	<b>190</b>	5.1
Nickel	0.5	mg/kg	<b>18</b>	<b>16</b>	11.8
Zinc	2	mg/kg	<b>200</b>	<b>180</b>	10.5
Mercury	0.05	mg/kg	<b>0.35</b>	<b>0.29</b>	18.8
<b>PAH</b>					
Benzo(a)pyrene	0.1	mg/kg	<b>1.0</b>	<b>1.5</b>	-40.0
Benzo(a)pyrene TEQ (lower bound)	0.2	mg/kg	<b>1.4</b>	<b>2.3</b>	-48.6
Benzo(a)pyrene TEQ (medium bound)	0.3	mg/kg	<b>1.4</b>	<b>2.3</b>	-48.6
Benzo(a)pyrene TEQ (upper bound)	0.2	mg/kg	<b>1.4</b>	<b>2.3</b>	-48.6
Naphthalene	0.1	mg/kg	<b>1.4</b>	<u>0.05</u>	186.2
Total PAH	0.8	mg/kg	<b>12</b>	<b>20</b>	-50.0


### Notes

RPD = Relative Percentage Difference.

RPD assessment criteria were adopted in general accordance with NEPM Schedule B3 Section 3.5 (NEPC 2013). RPDs where both primary and duplicate results were < 2.5 times the LOR were not considered. RPDs where primary and/or duplicate results were >2.5 times the LOR were assessed based on a threshold of +/- 30%. Exceedence of this threshold triggered consideration of associated data quality.



## Soil Screening Criteria


	LOR	Unit	Primary Sample	QA Sample	RPD
			BH13 0.1-0.2	DUP2	
<b>TRH</b>					
TRH C6-C10 Fraction	25	mg/kg	<u>12.5</u>	<u>12.5</u>	0.0
TRH C6-C10 less BTEX	25	mg/kg	<u>12.5</u>	<u>12.5</u>	0.0
TRH >C10-C16 Fraction	25	mg/kg	12.5	<u>12.5</u>	0.0
TRH >C10-C16 Fraction less N	25	mg/kg	<u>12.5</u>	<u>12.5</u>	0.0
TRH >C16-C34 Fraction	90	mg/kg	<b>110</b>	<b>100</b>	9.5
TRH >C34-C40 Fraction	120	mg/kg	<u>60</u>	<u>60</u>	0.0
Naphthalene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
<b>BTEX</b>					
Benzene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
Ethylbenzene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
m&p-Xylenes	0.2	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
o-Xylene	0.1	mg/kg	<u>0.1</u>	<u>0.1</u>	0.0
Toluene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
Xylenes - Total	0.3	mg/kg	<u>0.15</u>	<u>0.15</u>	0.0
<b>Metals</b>					
Arsenic	1	mg/kg	<b>7</b>	<b>9</b>	-25.0
Cadmium	0.3	mg/kg	<u>0.15</u>	<u>0.15</u>	0.0
Chromium	0.5	mg/kg	<b>9.2</b>	<b>6.9</b>	28.6
Copper	0.5	mg/kg	<b>17</b>	<b>17</b>	0.0
Lead	1	mg/kg	<b>65</b>	<b>46</b>	34.2
Nickel	0.5	mg/kg	<b>7.7</b>	<b>6.5</b>	16.9
Zinc	2	mg/kg	<b>71</b>	<b>54</b>	27.2
Mercury	0.05	mg/kg	<b>0.08</b>	<b>0.09</b>	-11.8
<b>PAH</b>					
Benzo(a)pyrene	0.1	mg/kg	<b>1.1</b>	<b>0.9</b>	20.0
Benzo(a)pyrene TEQ (lower bound)	0.2	mg/kg	<b>1.6</b>	<b>1.3</b>	20.7
Benzo(a)pyrene TEQ (medium bound)	0.3	mg/kg	<b>1.6</b>	<b>1.3</b>	20.7
Benzo(a)pyrene TEQ (upper bound)	0.2	mg/kg	<b>1.6</b>	<b>1.3</b>	20.7
Naphthalene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
Total PAH	0.8	mg/kg	<b>15</b>	<b>12</b>	50.0

### Notes

RPD = Relative Percentage Difference.

RPD assessment criteria were adopted in general accordance with NEPM Schedule B3 Section 3.5 (NEPC 2013). RPDs where both primary and duplicate results were < 2.5 times the LOR were not considered. RPDs where primary and/or duplicate results were >2.5 times the LOR were assessed based on a threshold of +/- 30%. Exceedence of this threshold triggered consideration of associated data quality.

## Soil Screening Criteria


	LOR	Unit	Primary Sample	QA Sample	RPD
			DUP1	TRIP1	
<b>TRH</b>					
TRH C6-C10 Fraction	25 // 10	mg/kg	<u>12.5</u>	<u>5</u>	85.7
TRH C6-C10 less BTEX	25 // 10	mg/kg	<u>12.5</u>	<u>5</u>	85.7
TRH >C10-C16 Fraction	25 // 10	mg/kg	<u>12.5</u>	<b>24</b>	-63.0
TRH >C10-C16 Fraction less N	25 // 10	mg/kg	<u>12.5</u>	<b>24</b>	-63.0
TRH >C16-C34 Fraction	90 // 20	mg/kg	<b>180</b>	<b>310</b>	-53.1
TRH >C34-C40 Fraction	120	mg/kg	<u>60</u>	<b>53</b>	12.4
Naphthalene	0.1	mg/kg	<u>0.05</u>	<b>0.1</b>	-66.7
<b>BTEX</b>					
Benzene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
Ethylbenzene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
m&p-Xylenes	0.2//0.1	mg/kg	0.1	<u>0.05</u>	66.7
o-Xylene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
Toluene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0
Xylenes - Total	0.3	mg/kg	<u>0.15</u>	-	-
<b>Metals</b>					
Arsenic	1 //2	mg/kg	<b>6</b>	<b>8</b>	-28.6
Cadmium	0.3 //0.2	mg/kg	<u>0.15</u>	<b>0.4</b>	-90.9
Chromium	0.5 // 2	mg/kg	<b>21</b>	<b>30</b>	-35.3
Copper	0.5 // 2	mg/kg	<b>32</b>	<b>33</b>	-3.1
Lead	1 // 2	mg/kg	<b>190</b>	<b>190</b>	0.0
Nickel	0.5 // 2	mg/kg	<b>16</b>	<b>20</b>	-22.2
Zinc	2	mg/kg	<b>180</b>	<b>180</b>	0.0
Mercury	0.05	mg/kg	<b>0.29</b>	<b>0.37</b>	-24.2
<b>PAH</b>					
Benzo(a)pyrene	0.1	mg/kg	<b>1.5</b>	<b>2.1</b>	-33.3
Benzo(a)pyrene TEQ (lower bound)	0.2	mg/kg	<b>2.3</b>	-	-
Benzo(a)pyrene TEQ (medium bound)	0.3	mg/kg	<b>2.3</b>	-	-
Benzo(a)pyrene TEQ (upper bound)	0.2	mg/kg	<b>2.3</b>	-	-
Naphthalene	0.1	mg/kg	<u>0.05</u>	<b>0.1</b>	-66.7
Total PAH	0.8	mg/kg	<b>20</b>	-	-

### Notes

RPD = Relative Percentage Difference.

RPD assessment criteria were adopted in general accordance with NEPM Schedule B3 Section 3.5 (NEPC 2013). RPDs where both primary and duplicate results were < 2.5 times the LOR were not considered. RPDs where primary and/or duplicate results were >2.5 times the LOR were assessed based on a threshold of +/- 30%. Exceedence of this threshold triggered consideration of associated data quality.


Rinsate Sample

	Metals							
	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
Limit of Reporting	1	0.1	1	1	1	1	5	0.0001

Sample ID	Sampled Date	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury
RINS1	19/6/2023	<1	<0.1	<1	<1	<1	<1	<5	<0.0001

Statistical Summary									
Number of Results	1	1	1	1	1	1	1	1	1
Number of Detects	0	0	0	0	0	0	0	0	0
Minimum Detect	-	-	-	-	-	-	-	-	-
Maximum Detect	-	-	-	-	-	-	-	-	-
Average Concentration	-	-	-	-	-	-	-	-	-
Number of Guideline Exceedances	-	-	-	-	-	-	-	-	-

## Soil Screening Criteria

	LOR Soil	Trip Spike Soil	Trip Blank Soil
Date	19/06/2023		
Unit of Measure	mg/kg	% Recovery	mg/kg
<b>BTEX</b>			
Benzene	0.1	[97%]	<0.1
Toluene	0.1	[106%]	<0.1
Ethylbenzene	0.1	[110%]	<0.1
m&p-Xylenes	0.2	[110%]	<0.2
o-Xylene	0.1	[111%]	<0.1
Xylenes - Total	0.3	N.A.	<0.3

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>Nonparametric UCL Statistics for Uncensored Full Data Sets</b>											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.129/06/2023 8:26:40 AM								
5	From File			Book1.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	<b>Lead</b>											
12												
13	<b>General Statistics</b>											
14	Total Number of Observations				36		Number of Distinct Observations				26	
15							Number of Missing Observations				0	
16	Minimum				4		Mean				116.1	
17	Maximum				1600		Median				35.5	
18	SD				281		Std. Error of Mean				46.83	
19	Coefficient of Variation				2.421		Skewness				4.575	
20	Mean of logged Data				3.468		SD of logged Data				1.508	
21												
22	<b>Nonparametric Distribution Free UCL Statistics</b>											
23	<b>Data do not follow a Discernible Distribution (0.05)</b>											
24												
25	<b>Assuming Normal Distribution</b>											
26	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>					
27	95% Student's-t UCL			195.2			95% Adjusted-CLT UCL (Chen-1995)			231.3		
28							95% Modified-t UCL (Johnson-1978)			201.2		
29												
30	<b>Nonparametric Distribution Free UCLs</b>											
31	95% CLT UCL			193.1			95% Jackknife UCL			195.2		
32	95% Standard Bootstrap UCL			192.6			95% Bootstrap-t UCL			338.4		
33	95% Hall's Bootstrap UCL			441.8			95% Percentile Bootstrap UCL			201.6		
34	95% BCA Bootstrap UCL			260.5								
35	90% Chebyshev(Mean, Sd) UCL			256.6			95% Chebyshev(Mean, Sd) UCL			320.2		
36	97.5% Chebyshev(Mean, Sd) UCL			408.6			99% Chebyshev(Mean, Sd) UCL			582.1		
37												
38	<b>Suggested UCL to Use</b>											
39	95% Chebyshev (Mean, Sd) UCL			320.2								
40												
41	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
42	Recommendations are based upon data size, data distribution, and skewness.											
43	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
44	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
45												



# Annex F

## Groundwater Sampling Sheet



Date: 27/06/2023  
 Client: Maitland City Council  
 Site: Maitland Gaol  
 Project Ref: E0076  
 Sampler: LK/FH

**WELL ID**  
  
**MW1**

### Equipment

Purging equipment type / ID:  Bailer  Peristaltic  Micropurge

Water Quality Meter ID: 18J104330

Interface Probe ID: 483925

### Well Gauging and Purge Volume Calculations (For Bailer Only)

Total well depth (m BTOC)		3.46m
Standing Water Level (m BTOC)		n/a
Water Column (m)		n/a
Well Volume (L)		n/a
Product Thickness (mm)	---	50
Volume removed (L)		n/a

### Water Quality Parameters

Starting Purge Time:			Ending Purge Time:			Pump Intake (mBTOC):		
Litres	Time	Drawdown <10cm	Temp (C) ± 0.5	DO (mg/L) ± 0.3 mg/L	EC (µS/cm) ± 3%	pH ± 0.1	ORP (mV) ± 10mV	Comments
								No water present

Sample Time: -      No. of containers used: n/a      Was the well dry purged?  Y  N

### QA/QC Checklist

Did Field Parameters Stabilise?  Y  N  N/A

Are air bubbles present in Vials?  Y  N  N/A

Was Sample for metals field filtered?  Y  N  N/A

Duplicate Sample Collected?  Y  N      Duplicate Sample ID(s): \_\_\_\_\_ N/A

Rinsate Blank Collected?  Y  N      Rinsate Blank ID: \_\_\_\_\_ N/A

## Groundwater Sampling Sheet



Date: 27/06/2023

Client: Maitland City Council

Site: Maitland Gaol

Project Ref: E0076

Sampler: LK/FH

**WELL ID**
**MW2**

### Equipment

 Puring equipment type / ID:  Bailer  Peristaltic  Micropurge

Water Quality Meter ID: 18J104330

Interface Probe ID: 483925

### Well Gauging and Purge Volume Calculations (For Bailer Only)

Total well depth (m BTOC)		3.46
Standing Water Level (m BTOC)		n/a
Water Column (m)		n/a
Well Volume (L)		n/a
Product Thickness (mm)	---	50
Volume removed (L)		n/a

### Water Quality Parameters

Starting Purge Time:		Ending Purge Time:			Pump Intake (mBTOC):			
Litres	Time	Drawdown <10cm	Temp (C) ± 0.5	DO (mg/L) ± 0.3 mg/L	EC (µS/cm) ± 3%	pH ± 0.1	ORP (mV) ± 10mV	Comments
								No water present

 Sample Time: -      No. of containers used: n/a      Was the well dry purged?  Y  N

### QA/QC Checklist

Did Field Parameters Stabilise?	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input checked="" type="checkbox"/> N/A	
Are air bubbles present in Vials?	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input checked="" type="checkbox"/> N/A	
Was Sample for metals field filtered?	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input checked="" type="checkbox"/> N/A	
Duplicate Sample Collected?	<input type="checkbox"/> Y	<input type="checkbox"/> N		Duplicate Sample ID(s): N/A
Rinsate Blank Collected?	<input type="checkbox"/> Y	<input type="checkbox"/> N		Rinsate Blank ID: N/A



## Groundwater Sampling Sheet



Date: 27/06/2023  
 Client: Maitland City Council  
 Site: Maitland Gaol  
 Project Ref: E0076  
 Sampler: LK/FH

**WELL ID**  
  
**MW3**

### Equipment

Purging equipment type / ID:  Bailer  Peristaltic  Micropurge  
 Water Quality Meter ID: 18J104330  
 Interface Probe ID: 483925

### Well Gauging and Purge Volume Calculations (For Bailer Only)

Total well depth (m BTOC)		3.71m
Standing Water Level (m BTOC)		2.51
Water Column (m)		1.2
Well Volume (L)		2.35
Product Thickness (mm)	---	50
Volume removed (L)		15

### Water Quality Parameters

Starting Purge Time: 10:50:00 AM		Ending Purge Time: 11:20:00 AM			Pump Intake (mBTOC):			
Litres	Time	Drawdown <10cm	Temp (C) ± 0.5	DO (mg/L) ± 0.3 mg/L	EC (µS/cm) ± 3%	pH ± 0.1	ORP (mV) ± 10mV	Comments
1	10:50		21.8	0	2060	6.15	17.2	Murky
4	10:55		21.4	8.33	34.8	6.3	19.3	Murky
9	11:00		21.9	0.3	2044	6.35	-35.3	Murky
11	11:05		21.6	0.65	2028	6.34	-31.5	Murky
13	11:10		21.8	1.40	2071	6.33	-58.5	Murky
14	11:10		21.9	1.36	2100	6.38	-48.3	Murky
15	11:15		21.9	0.75	2059	6.36	-36.5	Murky

Sample Time: 30 mins      No. of containers used: n/a      Was the well dry purged?  Y  N

### QA/QC Checklist


Did Field Parameters Stabilise?  Y  N  N/A  
 Are air bubbles present in Vials?  Y  N  N/A  
 Was Sample for metals field filtered?  Y  N  N/A  
 Duplicate Sample Collected?  Y  N  
 Rinsate Blank Collected?  Y  N

Duplicate Sample ID(s): DUP-W  
 Rinsate Blank ID: N/A



# Annex G

## Water Screening Criteria

	Metals									
	Arsenic (III)	Arsenic (V)	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead	Mercury	Nickel	Zinc
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Limit of Reporting	1	1	0.1	1	1	1	1	0.1	1	5
GILs Fresh Water (NEPM 2013)	24	13	0.2	-	1	1.4	3.4	0.06	11	8
GILs Marine Water (NEPM 2013)	-	-	0.7	27	4.4	1.3	4.4	0.1	7	15
Fresh Water 90% (ANZG 2018)	94	42	0.4	-	6	1.8	5.6	1.9	13	15
Recreational Water Quality and Aesthetics (ANZECC 2000)	-	-	5	-	-	1000	50	1	100	5000


Sample ID	Sampled Date	Arsenic (III)	Arsenic (V)	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead	Mercury	Nickel	Zinc
MW3	27/6/2023	11	11	<0.1	<1	<1	<1	<1	<0.1	4	7

Statistical Summary	Arsenic (III)	Arsenic (V)	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead	Mercury	Nickel	Zinc
Number of Results	1	1	1	1	1	1	1	1	1	1
Number of Detects	1	1	0	0	0	0	0	0	1	1
Minimum Detect	11	11	0	0	0	0	0	0	4	7
Maximum Detect	11	11	0	0	0	0	0	0	4	7
Average Concentration	11	11	-	-	-	-	-	-	4	7
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0

**Note:**

Where analytes are reported below the LOR these values are reported at half LOR to facilitate statistical assessment. Where this has occurred values have been underlined.

## Water Screening Criteria

	BTEX					TRH NEPM (2013)		
	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (p)	Naphthalene	TRH C6-C10 Fraction	TRH >C10-C16 Fraction
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Limit of Reporting	0.5	0.5	0.5	0.5	1	0.1	50	60
GILs Fresh Water (NEPM 2013)	950	-	-	350	200	16	-	-
GILs Drinking Water (NEPM 2013)	1	300	800	600	600	-	-	-
Fresh Water 90% (ANZG 2018)	1300	110	230	470	250	37	-	-
Recreational Water Quality and Aesthetics (ANZECC 2000)	10	-	-	1000	-	-	5	-
HSL D - Sand 2 to <4m (CRC Care 2011) - vapour intrusion	4900	NL	NL			NL	6200	NL
HSL D - Silt 2 to <4m (CRC Care 2011) - vapour intrusion	28000	NL	NL			NL	NL	NL
HSL D - Clay 2 to <4m (CRC Care 2011) - vapour intrusion	29000	NL	NL			NL	NL	NL


Sample ID	Sampled Date	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (p)	Naphthalene	TRH C6-C10 Fraction	TRH >C10-C16 Fraction
MW3	27/6/2023	<0.5	<0.5	<0.5	<0.5	<1	<0.1	<50	<60

Statistical Summary	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (p)	Naphthalene	TRH C6-C10 Fraction	TRH >C10-C16 Fraction
Number of Results	1	1	1	1	1	1	1	1
Number of Detects	0	0	0	0	0	0	0	0
Minimum Detect	0	0	0	0	0	0	0	0
Maximum Detect	0	0	0	0	0	0	0	0
Average Concentration	-	-	-	-	-	-	-	-
Number of Guideline Exceedances	0	0	0	0	0	0	0	0

**Note:**

Where analytes are reported below the LOR these values are reported at half LOR to facilitate statistical assessment. Where this has occurred values have been underlined.

## Water Screening Criteria

	PAH	
	Benzo(a)pyrene	Naphthalene
	µg/L	µg/L
Limit of Reporting	0.1	0.1
GILs Fresh Water (NEPM 2013)	-	16
GILs Marine Water (NEPM 2013)	-	50
GILs Drinking Water (NEPM 2013 )	0.01	-
Fresh Water 99% (ANZG 2018)	0.1	2.5
Fresh Water 95% (ANZG 2018)	0.2	16
Fresh Water 90% (ANZG 2018)	0.4	37
Recreational Water Quality and Aesthetics (ANZECC 2000)	0.01	-


Sample ID	Sampled Date	Benzo(a)pyrene	Naphthalene
MW3	27/6/2023	<0.1	<0.1

Statistical Summary	Benzo(a)pyrene	Naphthalene
Number of Results	1	1
Number of Detects	0	0
Minimum Detect	0	0
Maximum Detect	0	0
Average Concentration	-	-
Number of Guideline Exceedances	0	0

**Note:**

Where analytes are reported below the LOR these values are reported at half LOR to facilitate statistical assessment. Where this has occurred values have been underlined.

## Water Screening Criteria


	LOR	Unit	Primary Sample	QA Sample	RPD
			MW3	DUP_W	
<b>TRH</b>					
TRH C6-C10 Fraction	50	µg/L	<u>25</u>	<u>25</u>	0.0
TRH >C10-C16 Fraction	60	µg/L	<u>30</u>	<u>30</u>	0.0
<b>Metals</b>					
Arsenic	1	µg/L	<u>11</u>	<u>13</u>	-16.7
Cadmium	0.1	µg/L	<u>0.05</u>	<u>0.05</u>	0.0
Chromium	1	µg/L	<u>0.5</u>	<u>0.5</u>	0.0
Copper	1	µg/L	<u>0.5</u>	<u>1</u>	-66.7
Lead	1	µg/L	<u>0.5</u>	<u>1</u>	-66.7
Mercury	0.1	µg/L	<u>0.05</u>	<u>0.05</u>	0.0
Nickel	1	µg/L	<u>4</u>	<u>4</u>	0.0
Zinc	5	µg/L	<u>7</u>	<u>9</u>	-25.0
<b>PAH</b>					
Benzo(a)pyrene	0.1	µg/L	<u>0.05</u>	<u>0.05</u>	0.0
Naphthalene	0.1	µg/L	<u>0.05</u>	<u>0.05</u>	0.0
Total PAH	1	µg/L	<u>0.5</u>	<u>0.5</u>	0.0

### Note

RPD = Relative Percentage Difference

A RPD threshold of +/- 30% was adopted to assess duplicate data in accordance with NEPM Schedule B3 Section 3.5 (NEPC 2013)

## Water Screening Criteria

	LOR Soil	Trip Spike Soil	Trip Blank Soil
Date	19/06/2023		
Unit of Measure	mg/kg	% Recovery	mg/kg
<b>BTEX</b>			
Benzene	0.1	[97%]	<0.1
Toluene	0.1	[106%]	<0.1
Ethylbenzene	0.1	[110%]	<0.1
m&p-Xylenes	0.2	[110%]	<0.2
o-Xylene	0.1	[111%]	<0.1
Xylenes - Total	0.3	N.A.	<0.3



# Annex H



# Photographic Log

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**Photograph 1** – Existing Fuel bowsers (standard & super) onsite, vent pipes visible to the rear wall



**Photograph 2** – Existing Diesel Fuel bowser onsite, vent pipes visible to the rear wall

# Photographic Log

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**Photograph 3** – Existing concrete pavement facing Northeast



**Photograph 4** – Rear roller door storage area of Gaol, storage of various items

# Photographic Log

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**Photograph 5** – Curb of concrete hardstand driveway, cleared marking of BH7/MW3 location



**Photograph 6** – BH5 location within grassed area adjacent to John Street

# Photographic Log

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**Photograph 7** – Grassed area north of Gaol fence, facing Southwest towards John Street



**Photograph 8** – Grassed area north of Gaol fence, facing Southwest towards John Street



# Annex I

CLIENT DETAILS

Contact **Jake Duck**  
 Client **HUNTER ENVIRONMENTAL CONSULTING PTY LTD**  
 Address **PO BOX 3127  
 THORNTON NSW 2322**

Telephone **61 2 49661844**  
 Facsimile **(Not specified)**  
 Email **jd@hunterenviro.com.au**

Project **E0076 (GaoI)**  
 Order Number **HEC0178**  
 Samples **41**

LABORATORY DETAILS

Manager **Huong Crawford**  
 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 **SE249506 R0**  
 Date Received **21/6/2023**  
 Date Reported **28/6/2023**

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.

A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Yusuf Kuthupudin

SIGNATORIES



**Akheeqr BENIAMEEN**  
 Chemist



**Bennet LO**  
 Senior Chemist



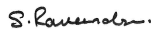
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 Metals/Inorganics Team Leader



**Kamrul AHSAN**  
 Senior Chemist



**Ly Kim HA**  
 Organic Section Head



**Ravee SIVASUBRAMANIAM**  
 Hygiene Team Leader



**Shane MCDERMOTT**  
 Inorganic/Metals Chemist



**Teresa NGUYEN**  
 Organic Chemist

VOC's in Soil [AN433] Tested: 21/6/2023

PARAMETER	UOM	LOR	BH1 0.1-0.2	BH2 0.2-0.3	BH2 1.1-1.2	BH3 0.2-0.3	BH3 1.4-1.5
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.001	19/6/2023 SE249506.002	19/6/2023 SE249506.003	19/6/2023 SE249506.004	19/6/2023 SE249506.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<b>0.3</b>	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH3 3.0-3.1	BH4 0.1-0.2	BH4 1.0-1.1	BH5 0.1-0.2	BH5 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.006	19/6/2023 SE249506.007	19/6/2023 SE249506.008	19/6/2023 SE249506.009	19/6/2023 SE249506.010
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH5 1.3-1.4	BH6 0.1-0.2	BH6 0.8-0.9	BH7 0.1-0.2	BH7 1.2-1.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.011	19/6/2023 SE249506.012	19/6/2023 SE249506.013	19/6/2023 SE249506.014	19/6/2023 SE249506.015
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH7 2.8-2.9	BH8 0.2-0.3	BH8 0.6-0.7	BH9 0.2-0.3	BH9 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.016	19/6/2023 SE249506.017	19/6/2023 SE249506.018	19/6/2023 SE249506.019	19/6/2023 SE249506.020
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

VOC's in Soil [AN433] Tested: 21/6/2023 (continued)

PARAMETER	UOM	LOR	BH9 1.4-1.5	BH10 0.1-0.2	BH10 0.3-0.4	BH10 1.0-1.1	BH11 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.021	19/6/2023 SE249506.022	19/6/2023 SE249506.023	19/6/2023 SE249506.024	19/6/2023 SE249506.025
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH11 0.7-0.8	BH11 1.1-1.2	BH12 0.2-0.3	BH12 0.7-0.8	BH12 2.2-2.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.026	19/6/2023 SE249506.027	19/6/2023 SE249506.028	19/6/2023 SE249506.029	19/6/2023 SE249506.030
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH13 0.1-0.2	BH14 0.2-0.3	BH15 0.2-0.3	BH15 1.3-1.4	BH16 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.031	19/6/2023 SE249506.032	19/6/2023 SE249506.033	19/6/2023 SE249506.034	19/6/2023 SE249506.035
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH16 1.7-1.8	DUP1	DUP2	TRIP SPIKE	TRIP BLANK
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.036	19/6/2023 SE249506.037	19/6/2023 SE249506.038	19/6/2023 SE249506.040	19/6/2023 SE249506.041
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	[97%]	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	[106%]	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	[110%]	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	[110%]	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	[111%]	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	-	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	-	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	-	<0.1



Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 21/6/2023

PARAMETER	UOM	LOR	BH1 0.1-0.2	BH2 0.2-0.3	BH2 1.1-1.2	BH3 0.2-0.3	BH3 1.4-1.5
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.001	19/6/2023 SE249506.002	19/6/2023 SE249506.003	19/6/2023 SE249506.004	19/6/2023 SE249506.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH3 3.0-3.1	BH4 0.1-0.2	BH4 1.0-1.1	BH5 0.1-0.2	BH5 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.006	19/6/2023 SE249506.007	19/6/2023 SE249506.008	19/6/2023 SE249506.009	19/6/2023 SE249506.010
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH5 1.3-1.4	BH6 0.1-0.2	BH6 0.8-0.9	BH7 0.1-0.2	BH7 1.2-1.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.011	19/6/2023 SE249506.012	19/6/2023 SE249506.013	19/6/2023 SE249506.014	19/6/2023 SE249506.015
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH7 2.8-2.9	BH8 0.2-0.3	BH8 0.6-0.7	BH9 0.2-0.3	BH9 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.016	19/6/2023 SE249506.017	19/6/2023 SE249506.018	19/6/2023 SE249506.019	19/6/2023 SE249506.020
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH9 1.4-1.5	BH10 0.1-0.2	BH10 0.3-0.4	BH10 1.0-1.1	BH11 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.021	19/6/2023 SE249506.022	19/6/2023 SE249506.023	19/6/2023 SE249506.024	19/6/2023 SE249506.025
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH11 0.7-0.8	BH11 1.1-1.2	BH12 0.2-0.3	BH12 0.7-0.8	BH12 2.2-2.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.026	19/6/2023 SE249506.027	19/6/2023 SE249506.028	19/6/2023 SE249506.029	19/6/2023 SE249506.030
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 21/6/2023 (continued)

PARAMETER	UOM	LOR	BH13 0.1-0.2	BH14 0.2-0.3	BH15 0.2-0.3	BH15 1.3-1.4	BH16 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.031	19/6/2023 SE249506.032	19/6/2023 SE249506.033	19/6/2023 SE249506.034	19/6/2023 SE249506.035
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH16 1.7-1.8	DUP1	DUP2	TRIP BLANK
			SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.036	19/6/2023 SE249506.037	19/6/2023 SE249506.038	19/6/2023 SE249506.041
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 21/6/2023

PARAMETER	UOM	LOR	BH1 0.1-0.2	BH2 0.2-0.3	BH2 1.1-1.2	BH3 0.2-0.3	BH3 1.4-1.5
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.001	19/6/2023 SE249506.002	19/6/2023 SE249506.003	19/6/2023 SE249506.004	19/6/2023 SE249506.005
TRH C10-C14	mg/kg	20	<20	<b>22</b>	<20	<20	<20
TRH C15-C28	mg/kg	45	<b>110</b>	<b>480</b>	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<b>150</b>	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<b>33</b>	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<b>32</b>	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<b>140</b>	<b>580</b>	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<b>110</b>	<b>650</b>	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<b>610</b>	<210	<210	<210

PARAMETER	UOM	LOR	BH3 3.0-3.1	BH4 0.1-0.2	BH4 1.0-1.1	BH5 0.1-0.2	BH5 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.006	19/6/2023 SE249506.007	19/6/2023 SE249506.008	19/6/2023 SE249506.009	19/6/2023 SE249506.010
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<b>87</b>	<45	<b>48</b>	<b>160</b>
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<b>71</b>
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<b>100</b>	<90	<90	<b>210</b>
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<b>240</b>
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH5 1.3-1.4	BH6 0.1-0.2	BH6 0.8-0.9	BH7 0.1-0.2	BH7 1.2-1.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.011	19/6/2023 SE249506.012	19/6/2023 SE249506.013	19/6/2023 SE249506.014	19/6/2023 SE249506.015
TRH C10-C14	mg/kg	20	<20	<b>36</b>	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<b>100</b>	<45	<b>160</b>	<b>88</b>
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<b>41</b>	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<b>41</b>	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<b>120</b>	<90	<b>180</b>	<b>120</b>
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<b>140</b>	<110	<b>160</b>	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 21/6/2023 (continued)

PARAMETER	UOM	LOR	BH7 2.8-2.9	BH8 0.2-0.3	BH8 0.6-0.7	BH9 0.2-0.3	BH9 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.016	19/6/2023 SE249506.017	19/6/2023 SE249506.018	19/6/2023 SE249506.019	19/6/2023 SE249506.020
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<b>160</b>	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<b>190</b>	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<b>160</b>	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH9 1.4-1.5	BH10 0.1-0.2	BH10 0.3-0.4	BH10 1.0-1.1	BH11 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.021	19/6/2023 SE249506.022	19/6/2023 SE249506.023	19/6/2023 SE249506.024	19/6/2023 SE249506.025
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<b>54</b>	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH11 0.7-0.8	BH11 1.1-1.2	BH12 0.2-0.3	BH12 0.7-0.8	BH12 2.2-2.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.026	19/6/2023 SE249506.027	19/6/2023 SE249506.028	19/6/2023 SE249506.029	19/6/2023 SE249506.030
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<b>60</b>	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 21/6/2023 (continued)

PARAMETER	UOM	LOR	BH13 0.1-0.2	BH14 0.2-0.3	BH15 0.2-0.3	BH15 1.3-1.4	BH16 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.031	19/6/2023 SE249506.032	19/6/2023 SE249506.033	19/6/2023 SE249506.034	19/6/2023 SE249506.035
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<b>87</b>	<b>97</b>	<b>59</b>	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<b>110</b>	<b>100</b>	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH16 1.7-1.8	DUP1	DUP2	TRIP BLANK
			SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.036	19/6/2023 SE249506.037	19/6/2023 SE249506.038	19/6/2023 SE249506.041
TRH C10-C14	mg/kg	20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<b>150</b>	<b>90</b>	<45
TRH C29-C36	mg/kg	45	<45	<b>45</b>	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<b>180</b>	<b>100</b>	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<b>190</b>	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 21/6/2023

PARAMETER	UOM	LOR	BH1 0.1-0.2	BH2 0.2-0.3	BH2 1.1-1.2	BH3 0.2-0.3	BH3 1.4-1.5
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.001	19/6/2023 SE249506.002	19/6/2023 SE249506.003	19/6/2023 SE249506.004	19/6/2023 SE249506.005
Naphthalene	mg/kg	0.1	<0.1	1.5	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	0.9	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	1.0	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	0.4	1.5	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	0.2	2.7	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	0.5	5.0	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	6.2	47	<0.1	0.3	<0.1
Anthracene	mg/kg	0.1	1.1	7.6	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	9.9	52	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	8.6	44	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	4.0	17	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	3.3	13	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	3.9	16	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	1.6	5.5	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	3.6	15	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	2.2	8.3	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	0.4	1.5	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	2.2	8.2	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	5.2	21	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	5.2	21	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	5.2	21	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	48	250	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	48	240	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	BH3 3.0-3.1	BH4 0.1-0.2	BH4 1.0-1.1	BH5 0.1-0.2	BH5 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.006	19/6/2023 SE249506.007	19/6/2023 SE249506.008	19/6/2023 SE249506.009	19/6/2023 SE249506.010
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	0.2	<0.1	<0.1	0.4
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	0.1
Phenanthrene	mg/kg	0.1	0.2	1.4	<0.1	0.2	2.3
Anthracene	mg/kg	0.1	<0.1	0.3	<0.1	<0.1	0.5
Fluoranthene	mg/kg	0.1	<0.1	2.3	<0.1	0.3	3.1
Pyrene	mg/kg	0.1	<0.1	2.0	<0.1	0.3	2.5
Benzo(a)anthracene	mg/kg	0.1	<0.1	1.0	<0.1	0.1	1.8
Chrysene	mg/kg	0.1	<0.1	0.9	<0.1	0.1	1.5
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	1.1	<0.1	0.1	1.7
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	0.4	<0.1	<0.1	0.7
Benzo(a)pyrene	mg/kg	0.1	<0.1	1.0	<0.1	0.1	1.4
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	0.6	<0.1	<0.1	0.8
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	0.1	<0.1	<0.1	0.2
Benzo(ghi)perylene	mg/kg	0.1	<0.1	0.6	<0.1	<0.1	0.7
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	1.4	<0.2	<0.2	2.1
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	1.4	<0.3	<0.3	2.1
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	1.4	<0.2	0.2	2.1
Total PAH (18)	mg/kg	0.8	<0.8	12	<0.8	1.4	18
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	12	<0.8	1.4	18

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 21/6/2023 (continued)

PARAMETER	UOM	LOR	BH5 1.3-1.4	BH6 0.1-0.2	BH6 0.8-0.9	BH7 0.1-0.2	BH7 1.2-1.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.011	19/6/2023 SE249506.012	19/6/2023 SE249506.013	19/6/2023 SE249506.014	19/6/2023 SE249506.015
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	0.2	<0.1	0.5	0.3
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	0.3	0.1
Phenanthrene	mg/kg	0.1	<0.1	1.5	<0.1	5.4	1.7
Anthracene	mg/kg	0.1	<0.1	0.3	<0.1	1.3	0.4
Fluoranthene	mg/kg	0.1	<0.1	2.9	<0.1	5.8	3.0
Pyrene	mg/kg	0.1	<0.1	2.5	<0.1	4.9	2.6
Benzo(a)anthracene	mg/kg	0.1	<0.1	1.1	<0.1	2.9	1.4
Chrysene	mg/kg	0.1	<0.1	1.0	<0.1	2.3	1.3
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	1.3	<0.1	2.2	1.5
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	0.5	<0.1	0.9	0.6
Benzo(a)pyrene	mg/kg	0.1	<0.1	1.2	<0.1	1.9	1.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	0.8	<0.1	1.0	0.8
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	0.1	<0.1	0.3	0.2
Benzo(ghi)perylene	mg/kg	0.1	<0.1	0.9	<0.1	0.9	0.8
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	1.7	<0.2	2.9	1.9
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	1.7	<0.3	2.9	1.9
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	1.7	<0.2	2.9	1.9
Total PAH (18)	mg/kg	0.8	<0.8	14	<0.8	31	16
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	14	<0.8	31	16

PARAMETER	UOM	LOR	BH7 2.8-2.9	BH8 0.2-0.3	BH8 0.6-0.7	BH9 0.2-0.3	BH9 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.016	19/6/2023 SE249506.017	19/6/2023 SE249506.018	19/6/2023 SE249506.019	19/6/2023 SE249506.020
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	0.1	0.1	0.4	0.2
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	0.1	<0.1	0.4
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	0.3
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	1.3
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	1.3

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 21/6/2023 (continued)

PARAMETER	UOM	LOR	BH9 1.4-1.5	BH10 0.1-0.2	BH10 0.3-0.4	BH10 1.0-1.1	BH11 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.021	19/6/2023 SE249506.022	19/6/2023 SE249506.023	19/6/2023 SE249506.024	19/6/2023 SE249506.025
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<b>0.1</b>	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<b>0.8</b>	<0.1	<b>0.1</b>	<0.1	<b>0.2</b>
Anthracene	mg/kg	0.1	<b>0.1</b>	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<b>1.0</b>	<b>0.1</b>	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<b>0.9</b>	<b>0.1</b>	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<b>0.6</b>	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<b>0.5</b>	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<b>0.5</b>	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<b>0.2</b>	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<b>0.5</b>	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<b>0.3</b>	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<b>0.3</b>	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<b>0.6</b>	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<b>0.7</b>	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<b>0.7</b>	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<b>5.7</b>	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<b>5.7</b>	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	BH11 0.7-0.8	BH11 1.1-1.2	BH12 0.2-0.3	BH12 0.7-0.8	BH12 2.2-2.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.026	19/6/2023 SE249506.027	19/6/2023 SE249506.028	19/6/2023 SE249506.029	19/6/2023 SE249506.030
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<b>0.2</b>	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<b>0.1</b>	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<b>0.3</b>	<b>1.6</b>	<b>0.4</b>	<b>0.5</b>	<0.1
Anthracene	mg/kg	0.1	<0.1	<b>0.3</b>	<0.1	<b>0.1</b>	<0.1
Fluoranthene	mg/kg	0.1	<b>0.4</b>	<b>1.6</b>	<0.1	<b>0.6</b>	<0.1
Pyrene	mg/kg	0.1	<b>0.3</b>	<b>1.4</b>	<0.1	<b>0.5</b>	<0.1
Benzo(a)anthracene	mg/kg	0.1	<b>0.1</b>	<b>0.7</b>	<0.1	<b>0.2</b>	<0.1
Chrysene	mg/kg	0.1	<b>0.1</b>	<b>0.7</b>	<0.1	<b>0.2</b>	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<b>0.1</b>	<b>0.7</b>	<0.1	<b>0.2</b>	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<b>0.3</b>	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<b>0.1</b>	<b>0.5</b>	<0.1	<b>0.2</b>	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<b>0.3</b>	<0.1	<b>0.1</b>	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<b>0.2</b>	<0.1	<b>0.1</b>	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<b>0.7</b>	<0.2	<b>0.3</b>	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<b>0.8</b>	<0.3	<b>0.4</b>	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<b>0.8</b>	<0.2	<b>0.3</b>	<0.2
Total PAH (18)	mg/kg	0.8	<b>1.3</b>	<b>8.6</b>	<0.8	<b>2.9</b>	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<b>1.3</b>	<b>8.6</b>	<0.8	<b>2.9</b>	<0.8



PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 21/6/2023 (continued)

PARAMETER	UOM	LOR	BH13 0.1-0.2	BH14 0.2-0.3	BH15 0.2-0.3	BH15 1.3-1.4	BH16 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.031	19/6/2023 SE249506.032	19/6/2023 SE249506.033	19/6/2023 SE249506.034	19/6/2023 SE249506.035
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<b>0.1</b>	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<b>0.3</b>	<0.1	<b>0.3</b>	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<b>0.2</b>	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<b>1.7</b>	<b>1.2</b>	<b>2.2</b>	<0.1	<b>0.4</b>
Anthracene	mg/kg	0.1	<b>0.4</b>	<b>0.1</b>	<b>0.5</b>	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<b>2.7</b>	<b>0.4</b>	<b>3.2</b>	<0.1	<b>0.1</b>
Pyrene	mg/kg	0.1	<b>2.5</b>	<b>0.4</b>	<b>3.0</b>	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<b>1.4</b>	<b>0.2</b>	<b>1.4</b>	<0.1	<0.1
Chrysene	mg/kg	0.1	<b>1.3</b>	<b>0.2</b>	<b>1.2</b>	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<b>1.3</b>	<0.1	<b>1.3</b>	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<b>0.6</b>	<0.1	<b>0.5</b>	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<b>1.1</b>	<0.1	<b>1.2</b>	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<b>0.6</b>	<0.1	<b>0.7</b>	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<b>0.1</b>	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<b>0.6</b>	<0.1	<b>0.7</b>	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<b>1.6</b>	<0.2	<b>1.6</b>	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<b>1.6</b>	<0.3	<b>1.7</b>	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<b>1.6</b>	<0.2	<b>1.7</b>	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<b>15</b>	<b>2.4</b>	<b>16</b>	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<b>15</b>	<b>2.4</b>	<b>16</b>	<0.8	<0.8

PARAMETER	UOM	LOR	BH16 1.7-1.8	DUP1	DUP2
			SOIL	SOIL	SOIL
			19/6/2023 SE249506.036	19/6/2023 SE249506.037	19/6/2023 SE249506.038
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<b>0.3</b>	<b>0.3</b>
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<b>0.1</b>	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<b>1.9</b>	<b>1.5</b>
Anthracene	mg/kg	0.1	<0.1	<b>0.5</b>	<b>0.4</b>
Fluoranthene	mg/kg	0.1	<0.1	<b>3.7</b>	<b>2.1</b>
Pyrene	mg/kg	0.1	<0.1	<b>3.4</b>	<b>2.0</b>
Benzo(a)anthracene	mg/kg	0.1	<0.1	<b>2.0</b>	<b>1.1</b>
Chrysene	mg/kg	0.1	<0.1	<b>1.8</b>	<b>1.0</b>
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<b>1.8</b>	<b>1.0</b>
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<b>0.7</b>	<b>0.4</b>
Benzo(a)pyrene	mg/kg	0.1	<0.1	<b>1.5</b>	<b>0.9</b>
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<b>0.8</b>	<b>0.5</b>
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<b>0.2</b>	<b>0.1</b>
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<b>0.7</b>	<b>0.5</b>
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<b>2.3</b>	<b>1.3</b>
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<b>2.3</b>	<b>1.3</b>
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<b>2.3</b>	<b>1.3</b>
Total PAH (18)	mg/kg	0.8	<0.8	<b>20</b>	<b>12</b>
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<b>20</b>	<b>12</b>

PCBs in Soil [AN420] Tested: 21/6/2023

PARAMETER	UOM	LOR	BH3 0.2-0.3	BH4 0.1-0.2	BH5 0.1-0.2	BH6 0.1-0.2	BH7 0.1-0.2
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.004	19/6/2023 SE249506.007	19/6/2023 SE249506.009	19/6/2023 SE249506.012	19/6/2023 SE249506.014
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	BH7 1.2-1.3	BH10 0.3-0.4	BH11 0.2-0.3	BH11 0.7-0.8	BH15 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.015	19/6/2023 SE249506.023	19/6/2023 SE249506.025	19/6/2023 SE249506.026	19/6/2023 SE249506.033
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 21/6/2023

PARAMETER	UOM	LOR	BH3 0.2-0.3	BH4 0.1-0.2	BH5 0.1-0.2	BH6 0.1-0.2	BH7 0.1-0.2
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.004	19/6/2023 SE249506.007	19/6/2023 SE249506.009	19/6/2023 SE249506.012	19/6/2023 SE249506.014
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

PARAMETER	UOM	LOR	BH7 1.2-1.3	BH10 0.3-0.4	BH11 0.2-0.3	BH11 0.7-0.8	BH15 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.015	19/6/2023 SE249506.023	19/6/2023 SE249506.025	19/6/2023 SE249506.026	19/6/2023 SE249506.033
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

OC Pesticides in Soil [AN420] Tested: 21/6/2023

PARAMETER	UOM	LOR	BH3 0.2-0.3	BH4 0.1-0.2	BH5 0.1-0.2	BH6 0.1-0.2	BH7 0.1-0.2
			SOIL - 19/6/2023 SE249506.004	SOIL - 19/6/2023 SE249506.007	SOIL - 19/6/2023 SE249506.009	SOIL - 19/6/2023 SE249506.012	SOIL - 19/6/2023 SE249506.014
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<b>1.3</b>	<0.1	<b>1.7</b>	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<b>0.2</b>	<0.1	<b>0.2</b>	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<b>0.2</b>	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<b>3.2</b>	<0.1	<b>1.5</b>	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<b>5</b>	<1	<b>3</b>	<1
Total OC VIC EPA	mg/kg	1	<1	<b>5</b>	<1	<b>3</b>	<1

OC Pesticides in Soil [AN420] Tested: 21/6/2023 (continued)

PARAMETER	UOM	LOR	BH7 1.2-1.3	BH10 0.3-0.4	BH11 0.2-0.3	BH11 0.7-0.8	BH15 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.015	19/6/2023 SE249506.023	19/6/2023 SE249506.025	19/6/2023 SE249506.026	19/6/2023 SE249506.033
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<b>4.4</b>	<0.1	<0.1	<0.1	<b>0.3</b>
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<b>0.4</b>	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<b>0.5</b>	<0.1	<0.1	<0.1	<b>0.2</b>
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<b>5</b>	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<b>5</b>	<1	<1	<1	<1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 21/6/2023

PARAMETER	UOM	LOR	BH1 0.1-0.2	BH2 0.2-0.3	BH2 1.1-1.2	BH3 0.2-0.3	BH3 1.4-1.5
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.001	19/6/2023 SE249506.002	19/6/2023 SE249506.003	19/6/2023 SE249506.004	19/6/2023 SE249506.005
Arsenic, As	mg/kg	1	<b>7</b>	<b>9</b>	<b>6</b>	<b>10</b>	<b>6</b>
Cadmium, Cd	mg/kg	0.3	<b>0.4</b>	<b>0.3</b>	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	<b>30</b>	<b>20</b>	<b>1.3</b>	<b>1.3</b>	<b>4.5</b>
Copper, Cu	mg/kg	0.5	<b>32</b>	<b>30</b>	<b>2.2</b>	<b>15</b>	<b>14</b>
Lead, Pb	mg/kg	1	<b>240</b>	<b>1600</b>	<b>7</b>	<b>5</b>	<b>35</b>
Nickel, Ni	mg/kg	0.5	<b>15</b>	<b>15</b>	<0.5	<b>1.5</b>	<b>1.6</b>
Zinc, Zn	mg/kg	2	<b>240</b>	<b>240</b>	<b>5.5</b>	<b>12</b>	<b>39</b>

PARAMETER	UOM	LOR	BH3 3.0-3.1	BH4 0.1-0.2	BH4 1.0-1.1	BH5 0.1-0.2	BH5 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.006	19/6/2023 SE249506.007	19/6/2023 SE249506.008	19/6/2023 SE249506.009	19/6/2023 SE249506.010
Arsenic, As	mg/kg	1	<b>6</b>	<b>6</b>	<b>3</b>	<b>9</b>	<b>6</b>
Cadmium, Cd	mg/kg	0.3	<0.3	<b>0.3</b>	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	<b>6.5</b>	<b>28</b>	<b>2.6</b>	<b>3.5</b>	<b>9.2</b>
Copper, Cu	mg/kg	0.5	<b>20</b>	<b>37</b>	<b>3.8</b>	<b>16</b>	<b>26</b>
Lead, Pb	mg/kg	1	<b>36</b>	<b>200</b>	<b>8</b>	<b>27</b>	<b>490</b>
Nickel, Ni	mg/kg	0.5	<b>2.4</b>	<b>18</b>	<b>0.9</b>	<b>3.4</b>	<b>7.6</b>
Zinc, Zn	mg/kg	2	<b>61</b>	<b>200</b>	<b>30</b>	<b>28</b>	<b>150</b>

PARAMETER	UOM	LOR	BH5 1.3-1.4	BH6 0.1-0.2	BH6 0.8-0.9	BH7 0.1-0.2	BH7 1.2-1.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.011	19/6/2023 SE249506.012	19/6/2023 SE249506.013	19/6/2023 SE249506.014	19/6/2023 SE249506.015
Arsenic, As	mg/kg	1	<b>3</b>	<b>5</b>	<b>3</b>	<b>9</b>	<b>10</b>
Cadmium, Cd	mg/kg	0.3	<0.3	<b>0.4</b>	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	<b>2.2</b>	<b>48</b>	<b>3.1</b>	<b>6.7</b>	<b>19</b>
Copper, Cu	mg/kg	0.5	<b>2.0</b>	<b>28</b>	<b>1.5</b>	<b>18</b>	<b>24</b>
Lead, Pb	mg/kg	1	<b>8</b>	<b>61</b>	<b>9</b>	<b>70</b>	<b>200</b>
Nickel, Ni	mg/kg	0.5	<b>0.7</b>	<b>30</b>	<b>1.1</b>	<b>5.3</b>	<b>16</b>
Zinc, Zn	mg/kg	2	<b>21</b>	<b>120</b>	<b>12</b>	<b>45</b>	<b>140</b>

PARAMETER	UOM	LOR	BH7 2.8-2.9	BH8 0.2-0.3	BH8 0.6-0.7	BH9 0.2-0.3	BH9 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.016	19/6/2023 SE249506.017	19/6/2023 SE249506.018	19/6/2023 SE249506.019	19/6/2023 SE249506.020
Arsenic, As	mg/kg	1	<b>5</b>	<b>9</b>	<b>7</b>	<b>9</b>	<b>8</b>
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	<b>4.4</b>	<b>2.0</b>	<b>4.5</b>	<b>1.6</b>	<b>4.4</b>
Copper, Cu	mg/kg	0.5	<b>9.1</b>	<b>15</b>	<b>7.8</b>	<b>22</b>	<b>14</b>
Lead, Pb	mg/kg	1	<b>58</b>	<b>6</b>	<b>39</b>	<b>6</b>	<b>46</b>
Nickel, Ni	mg/kg	0.5	<b>2.2</b>	<b>2.3</b>	<b>3.7</b>	<b>2.3</b>	<b>2.0</b>
Zinc, Zn	mg/kg	2	<b>100</b>	<b>49</b>	<b>52</b>	<b>15</b>	<b>43</b>

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 21/6/2023

PARAMETER	UOM	LOR	BH9 1.4-1.5	BH10 0.1-0.2	BH10 0.3-0.4	BH10 1.0-1.1	BH11 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.021	19/6/2023 SE249506.022	19/6/2023 SE249506.023	19/6/2023 SE249506.024	19/6/2023 SE249506.025
Arsenic, As	mg/kg	1	8	3	9	4	9
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	6.4	11	1.8	3.2	2.0
Copper, Cu	mg/kg	0.5	16	7.3	20	4.8	25
Lead, Pb	mg/kg	1	67	8	6	20	6
Nickel, Ni	mg/kg	0.5	3.6	14	2.8	1.3	2.6
Zinc, Zn	mg/kg	2	62	25	17	17	18

PARAMETER	UOM	LOR	BH11 0.7-0.8	BH11 1.1-1.2	BH12 0.2-0.3	BH12 0.7-0.8	BH12 2.2-2.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.026	19/6/2023 SE249506.027	19/6/2023 SE249506.028	19/6/2023 SE249506.029	19/6/2023 SE249506.030
Arsenic, As	mg/kg	1	7	12	8	10	7
Cadmium, Cd	mg/kg	0.3	<0.3	3.7	<0.3	0.4	<0.3
Chromium, Cr	mg/kg	0.5	4.2	7.3	1.0	6.5	11
Copper, Cu	mg/kg	0.5	13	20	10	12	20
Lead, Pb	mg/kg	1	39	160	4	49	46
Nickel, Ni	mg/kg	0.5	2.1	5.2	1.1	4.6	1.0
Zinc, Zn	mg/kg	2	84	1400	6.3	140	20

PARAMETER	UOM	LOR	BH13 0.1-0.2	BH14 0.2-0.3	BH15 0.2-0.3	BH15 1.3-1.4	BH16 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			19/6/2023 SE249506.031	19/6/2023 SE249506.032	19/6/2023 SE249506.033	19/6/2023 SE249506.034	19/6/2023 SE249506.035
Arsenic, As	mg/kg	1	7	12	9	2	9
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	0.4	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	9.2	2.9	16	1.6	2.7
Copper, Cu	mg/kg	0.5	17	28	33	3.5	19
Lead, Pb	mg/kg	1	65	8	500	16	9
Nickel, Ni	mg/kg	0.5	7.7	4.7	8.5	<0.5	3.0
Zinc, Zn	mg/kg	2	71	20	230	9.0	34

PARAMETER	UOM	LOR	BH16 1.7-1.8	DUP1	DUP2
			SOIL	SOIL	SOIL
			19/6/2023 SE249506.036	19/6/2023 SE249506.037	19/6/2023 SE249506.038
Arsenic, As	mg/kg	1	8	6	9
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	3.9	21	6.9
Copper, Cu	mg/kg	0.5	7.3	32	17
Lead, Pb	mg/kg	1	25	190	46
Nickel, Ni	mg/kg	0.5	1.1	16	6.5
Zinc, Zn	mg/kg	2	15	180	54

Mercury in Soil [AN312] Tested: 21/6/2023

			BH1 0.1-0.2	BH2 0.2-0.3	BH2 1.1-1.2	BH3 0.2-0.3	BH3 1.4-1.5
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.001	SE249506.002	SE249506.003	SE249506.004	SE249506.005
Mercury	mg/kg	0.05	<b>0.27</b>	<b>0.23</b>	<0.05	<b>0.12</b>	<b>0.08</b>

			BH3 3.0-3.1	BH4 0.1-0.2	BH4 1.0-1.1	BH5 0.1-0.2	BH5 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.006	SE249506.007	SE249506.008	SE249506.009	SE249506.010
Mercury	mg/kg	0.05	<b>0.09</b>	<b>0.35</b>	<0.05	<b>0.05</b>	<b>0.41</b>

			BH5 1.3-1.4	BH6 0.1-0.2	BH6 0.8-0.9	BH7 0.1-0.2	BH7 1.2-1.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.011	SE249506.012	SE249506.013	SE249506.014	SE249506.015
Mercury	mg/kg	0.05	<0.05	<b>0.11</b>	<0.05	<b>0.07</b>	<b>0.17</b>

			BH7 2.8-2.9	BH8 0.2-0.3	BH8 0.6-0.7	BH9 0.2-0.3	BH9 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.016	SE249506.017	SE249506.018	SE249506.019	SE249506.020
Mercury	mg/kg	0.05	<b>1.1</b>	<b>0.08</b>	<b>0.05</b>	<b>0.09</b>	<0.05

			BH9 1.4-1.5	BH10 0.1-0.2	BH10 0.3-0.4	BH10 1.0-1.1	BH11 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.021	SE249506.022	SE249506.023	SE249506.024	SE249506.025
Mercury	mg/kg	0.05	<b>0.07</b>	<0.05	<b>0.05</b>	<b>0.07</b>	<b>0.09</b>

			BH11 0.7-0.8	BH11 1.1-1.2	BH12 0.2-0.3	BH12 0.7-0.8	BH12 2.2-2.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.026	SE249506.027	SE249506.028	SE249506.029	SE249506.030
Mercury	mg/kg	0.05	<b>0.07</b>	<b>0.39</b>	<b>0.07</b>	<b>0.08</b>	<b>0.06</b>

			BH13 0.1-0.2	BH14 0.2-0.3	BH15 0.2-0.3	BH15 1.3-1.4	BH16 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.031	SE249506.032	SE249506.033	SE249506.034	SE249506.035
Mercury	mg/kg	0.05	<b>0.08</b>	<b>0.08</b>	<b>0.15</b>	<0.05	<b>0.11</b>



Mercury in Soil [AN312] Tested: 21/6/2023 (continued)

PARAMETER	UOM	LOR	BH16 1.7-1.8	DUP1	DUP2
			SOIL - 19/6/2023 SE249506.036	SOIL - 19/6/2023 SE249506.037	SOIL - 19/6/2023 SE249506.038
Mercury	mg/kg	0.05	<b>0.07</b>	<b>0.29</b>	<b>0.09</b>

Moisture Content [AN002] Tested: 21/6/2023

			BH1 0.1-0.2	BH2 0.2-0.3	BH2 1.1-1.2	BH3 0.2-0.3	BH3 1.4-1.5
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.001	SE249506.002	SE249506.003	SE249506.004	SE249506.005
% Moisture	%w/w	1	<b>12.1</b>	<b>16.9</b>	<b>9.5</b>	<b>15.0</b>	<b>19.7</b>

			BH3 3.0-3.1	BH4 0.1-0.2	BH4 1.0-1.1	BH5 0.1-0.2	BH5 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.006	SE249506.007	SE249506.008	SE249506.009	SE249506.010
% Moisture	%w/w	1	<b>17.2</b>	<b>16.7</b>	<b>10.1</b>	<b>8.4</b>	<b>11.8</b>

			BH5 1.3-1.4	BH6 0.1-0.2	BH6 0.8-0.9	BH7 0.1-0.2	BH7 1.2-1.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.011	SE249506.012	SE249506.013	SE249506.014	SE249506.015
% Moisture	%w/w	1	<b>10.3</b>	<b>14.1</b>	<b>14.5</b>	<b>11.7</b>	<b>15.4</b>

			BH7 2.8-2.9	BH8 0.2-0.3	BH8 0.6-0.7	BH9 0.2-0.3	BH9 0.7-0.8
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.016	SE249506.017	SE249506.018	SE249506.019	SE249506.020
% Moisture	%w/w	1	<b>35.9</b>	<b>13.3</b>	<b>19.4</b>	<b>15.9</b>	<b>17.2</b>

			BH9 1.4-1.5	BH10 0.1-0.2	BH10 0.3-0.4	BH10 1.0-1.1	BH11 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.021	SE249506.022	SE249506.023	SE249506.024	SE249506.025
% Moisture	%w/w	1	<b>16.9</b>	<b>8.3</b>	<b>15.3</b>	<b>18.0</b>	<b>15.0</b>

			BH11 0.7-0.8	BH11 1.1-1.2	BH12 0.2-0.3	BH12 0.7-0.8	BH12 2.2-2.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.026	SE249506.027	SE249506.028	SE249506.029	SE249506.030
% Moisture	%w/w	1	<b>19.2</b>	<b>18.3</b>	<b>14.0</b>	<b>15.0</b>	<b>29.7</b>

			BH13 0.1-0.2	BH14 0.2-0.3	BH15 0.2-0.3	BH15 1.3-1.4	BH16 0.2-0.3
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.031	SE249506.032	SE249506.033	SE249506.034	SE249506.035
% Moisture	%w/w	1	<b>11.9</b>	<b>15.6</b>	<b>12.7</b>	<b>11.0</b>	<b>9.8</b>

Moisture Content [AN002] Tested: 21/6/2023 (continued)

			BH16 1.7-1.8	DUP1	DUP2	TRIP BLANK
			SOIL	SOIL	SOIL	SOIL
			-	-	-	-
			19/6/2023	19/6/2023	19/6/2023	19/6/2023
PARAMETER	UOM	LOR	SE249506.036	SE249506.037	SE249506.038	SE249506.041
% Moisture	%w/w	1	<b>21.8</b>	<b>17.1</b>	<b>13.0</b>	<1.0

Fibre Identification in soil [AS4964/AN602] Tested: 27/6/2023

PARAMETER	UOM	LOR	BH1 0.1-0.2	BH2 0.2-0.3	BH4 0.1-0.2	BH7 0.1-0.2	BH10 0.1-0.2
			SOIL - 19/6/2023 SE249506.001	SOIL - 19/6/2023 SE249506.002	SOIL - 19/6/2023 SE249506.007	SOIL - 19/6/2023 SE249506.014	SOIL - 19/6/2023 SE249506.022
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 22/6/2023

			RINS1
			WATER
			-
			19/6/2023
			SE249506.039
PARAMETER	UOM	LOR	
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

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 26/6/2023

			RINS1
			WATER
			-
			19/6/2023
PARAMETER	UOM	LOR	SE249506.039
Mercury	mg/L	0.0001	<0.0001

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.
- 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** SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
- 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.
- AN602/AS4964** Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
- AN602/AS4964** Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
- AN602/AS4964** AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

**AN602/AS4964**

The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%/w/w) where AN602 section 4.5 of this method has been followed, and if-

- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres);
- (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and
- (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

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](http://www.sgs.com.au/en-gb/environment-health-and-safety).

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 Order Number **HEC0178**  
 Samples **5**

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SGS Reference **SE249506 R0**  
 Date Received **21 Jun 2023**  
 Date Reported **28 Jun 2023**

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.

A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin

SIGNATORIES



Ravee SIVASUBRAMANIAM  
 Hygiene Team Leader

RESULTS

Fibre Identification in soil

Method AS4964/AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE249506.001	BH1 0.1-0.2	Soil	86g Clay, Sand, Soil, Rocks	19 Jun 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE249506.002	BH2 0.2-0.3	Soil	97g Clay, Sand, Soil, Rocks	19 Jun 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE249506.007	BH4 0.1-0.2	Soil	58g Clay, Sand, Soil, Rocks	19 Jun 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE249506.014	BH7 0.1-0.2	Soil	94g Clay, Sand, Rocks	19 Jun 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE249506.022	BH10 0.1-0.2	Soil	77g Sand, Soil, Rocks	19 Jun 2023	No Asbestos Found at RL of 0.1g/kg	<0.01

METHOD

METHODOLOGY SUMMARY

AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states: "Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- <ul style="list-style-type: none"> <li>(a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres);</li> <li>(b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and</li> <li>(c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.</li> </ul>

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.
			***	-	Indicates that both * and ** apply.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.

Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.

Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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](http://www.sgs.com.au/en-gb/environment-health-and-safety).

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Project **E0076 (Gaol)**  
 Order Number **HEC0178**  
 Samples **41**

### LABORATORY DETAILS

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 Laboratory **SGS Alexandria Environmental**  
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SGS Reference **SE249506 R0**  
 Date Received **21 Jun 2023**  
 Date Reported **28 Jun 2023**

### 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:

Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	5 items
	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	1 item
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
Matrix Spike	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	4 items
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items
	TRH (Total Recoverable Hydrocarbons) in Soil	2 items

### SAMPLE SUMMARY

Sample counts by matrix	40 Soil, 1 Water	Type of documentation received	COC
Date documentation received	21/6/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	10.1°C
Sample container provider	SGS	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		

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 sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### Fibre Identification in soil

Method: ME-(AU)-[ENV]AS4964/AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.1-0.2	SE249506.001	LB283756	19 Jun 2023	21 Jun 2023	18 Jun 2024	27 Jun 2023	18 Jun 2024	28 Jun 2023
BH2 0.2-0.3	SE249506.002	LB283756	19 Jun 2023	21 Jun 2023	18 Jun 2024	27 Jun 2023	18 Jun 2024	28 Jun 2023
BH4 0.1-0.2	SE249506.007	LB283756	19 Jun 2023	21 Jun 2023	18 Jun 2024	27 Jun 2023	18 Jun 2024	28 Jun 2023
BH7 0.1-0.2	SE249506.014	LB283756	19 Jun 2023	21 Jun 2023	18 Jun 2024	27 Jun 2023	18 Jun 2024	28 Jun 2023
BH10 0.1-0.2	SE249506.022	LB283756	19 Jun 2023	21 Jun 2023	18 Jun 2024	27 Jun 2023	18 Jun 2024	28 Jun 2023

### 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
RINS1	SE249506.039	LB283549	19 Jun 2023	21 Jun 2023	17 Jul 2023	26 Jun 2023	17 Jul 2023	26 Jun 2023

### Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.1-0.2	SE249506.001	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH2 0.2-0.3	SE249506.002	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH2 1.1-1.2	SE249506.003	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH3 0.2-0.3	SE249506.004	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH3 1.4-1.5	SE249506.005	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH3 3.0-3.1	SE249506.006	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH4 0.1-0.2	SE249506.007	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH4 1.0-1.1	SE249506.008	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH5 0.1-0.2	SE249506.009	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH5 0.7-0.8	SE249506.010	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH5 1.3-1.4	SE249506.011	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH6 0.1-0.2	SE249506.012	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH6 0.8-0.9	SE249506.013	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH7 0.1-0.2	SE249506.014	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH7 1.2-1.3	SE249506.015	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH7 2.8-2.9	SE249506.016	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH8 0.2-0.3	SE249506.017	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH8 0.6-0.7	SE249506.018	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH9 0.2-0.3	SE249506.019	LB283182	19 Jun 2023	21 Jun 2023	17 Jul 2023	21 Jun 2023	17 Jul 2023	27 Jun 2023
BH9 0.7-0.8	SE249506.020	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH9 1.4-1.5	SE249506.021	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH10 0.1-0.2	SE249506.022	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH10 0.3-0.4	SE249506.023	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH10 1.0-1.1	SE249506.024	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH11 0.2-0.3	SE249506.025	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH11 0.7-0.8	SE249506.026	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH11 1.1-1.2	SE249506.027	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH12 0.2-0.3	SE249506.028	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH12 0.7-0.8	SE249506.029	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH12 2.2-2.3	SE249506.030	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH13 0.1-0.2	SE249506.031	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH14 0.2-0.3	SE249506.032	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH15 0.2-0.3	SE249506.033	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH15 1.3-1.4	SE249506.034	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH16 0.2-0.3	SE249506.035	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
BH16 1.7-1.8	SE249506.036	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
DUP1	SE249506.037	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023
DUP2	SE249506.038	LB283247	19 Jun 2023	21 Jun 2023	17 Jul 2023	22 Jun 2023	17 Jul 2023	28 Jun 2023

### Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.1-0.2	SE249506.001	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH2 0.2-0.3	SE249506.002	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH2 1.1-1.2	SE249506.003	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH3 0.2-0.3	SE249506.004	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH3 1.4-1.5	SE249506.005	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH3 3.0-3.1	SE249506.006	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH4 0.1-0.2	SE249506.007	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023

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 sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### Moisture Content (continued)

Method: ME-(AU)-ENVJAN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4 1.0-1.1	SE249506.008	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH5 0.1-0.2	SE249506.009	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH5 0.7-0.8	SE249506.010	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH5 1.3-1.4	SE249506.011	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH6 0.1-0.2	SE249506.012	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH6 0.8-0.9	SE249506.013	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH7 0.1-0.2	SE249506.014	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH7 1.2-1.3	SE249506.015	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH7 2.8-2.9	SE249506.016	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH8 0.2-0.3	SE249506.017	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH8 0.6-0.7	SE249506.018	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH9 0.2-0.3	SE249506.019	LB283183	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	26 Jun 2023	26 Jun 2023
BH9 0.7-0.8	SE249506.020	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH9 1.4-1.5	SE249506.021	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH10 0.1-0.2	SE249506.022	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH10 0.3-0.4	SE249506.023	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH10 1.0-1.1	SE249506.024	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH11 0.2-0.3	SE249506.025	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH11 0.7-0.8	SE249506.026	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH11 1.1-1.2	SE249506.027	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH12 0.2-0.3	SE249506.028	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH12 0.7-0.8	SE249506.029	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH12 2.2-2.3	SE249506.030	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH13 0.1-0.2	SE249506.031	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH14 0.2-0.3	SE249506.032	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH15 0.2-0.3	SE249506.033	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH15 1.3-1.4	SE249506.034	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH16 0.2-0.3	SE249506.035	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
BH16 1.7-1.8	SE249506.036	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
DUP1	SE249506.037	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
DUP2	SE249506.038	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023
TRIP BLANK	SE249506.041	LB283517	19 Jun 2023	21 Jun 2023	03 Jul 2023	23 Jun 2023	28 Jun 2023	27 Jun 2023

### OC Pesticides in Soil

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.1-0.2	SE249506.001	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH2 0.2-0.3	SE249506.002	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH2 1.1-1.2	SE249506.003	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH3 0.2-0.3	SE249506.004	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH3 1.4-1.5	SE249506.005	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH3 3.0-3.1	SE249506.006	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH4 0.1-0.2	SE249506.007	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH4 1.0-1.1	SE249506.008	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH5 0.1-0.2	SE249506.009	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH5 0.7-0.8	SE249506.010	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH5 1.3-1.4	SE249506.011	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH6 0.1-0.2	SE249506.012	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH6 0.8-0.9	SE249506.013	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH7 0.1-0.2	SE249506.014	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH7 1.2-1.3	SE249506.015	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH7 2.8-2.9	SE249506.016	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH8 0.2-0.3	SE249506.017	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH8 0.6-0.7	SE249506.018	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH9 0.2-0.3	SE249506.019	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH9 0.7-0.8	SE249506.020	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH9 1.4-1.5	SE249506.021	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH10 0.1-0.2	SE249506.022	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH10 0.3-0.4	SE249506.023	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH10 1.0-1.1	SE249506.024	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH11 0.2-0.3	SE249506.025	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023

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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 sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### OC Pesticides in Soil (continued)

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH11 0.7-0.8	SE249506.026	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH11 1.1-1.2	SE249506.027	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH12 0.2-0.3	SE249506.028	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH12 0.7-0.8	SE249506.029	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH12 2.2-2.3	SE249506.030	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH13 0.1-0.2	SE249506.031	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH14 0.2-0.3	SE249506.032	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH15 0.2-0.3	SE249506.033	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH15 1.3-1.4	SE249506.034	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH16 0.2-0.3	SE249506.035	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH16 1.7-1.8	SE249506.036	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
DUP1	SE249506.037	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
DUP2	SE249506.038	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
TRIP BLANK	SE249506.041	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023

### OP Pesticides in Soil

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.1-0.2	SE249506.001	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH2 0.2-0.3	SE249506.002	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH2 1.1-1.2	SE249506.003	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH3 0.2-0.3	SE249506.004	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH3 1.4-1.5	SE249506.005	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH3 3.0-3.1	SE249506.006	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH4 0.1-0.2	SE249506.007	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH4 1.0-1.1	SE249506.008	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH5 0.1-0.2	SE249506.009	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH5 0.7-0.8	SE249506.010	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH5 1.3-1.4	SE249506.011	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH6 0.1-0.2	SE249506.012	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH6 0.8-0.9	SE249506.013	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH7 0.1-0.2	SE249506.014	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH7 1.2-1.3	SE249506.015	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH7 2.8-2.9	SE249506.016	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH8 0.2-0.3	SE249506.017	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH8 0.6-0.7	SE249506.018	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH9 0.2-0.3	SE249506.019	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH9 0.7-0.8	SE249506.020	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH9 1.4-1.5	SE249506.021	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH10 0.1-0.2	SE249506.022	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH10 0.3-0.4	SE249506.023	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH10 1.0-1.1	SE249506.024	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH11 0.2-0.3	SE249506.025	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH11 0.7-0.8	SE249506.026	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH11 1.1-1.2	SE249506.027	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH12 0.2-0.3	SE249506.028	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH12 0.7-0.8	SE249506.029	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH12 2.2-2.3	SE249506.030	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH13 0.1-0.2	SE249506.031	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH14 0.2-0.3	SE249506.032	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH15 0.2-0.3	SE249506.033	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH15 1.3-1.4	SE249506.034	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH16 0.2-0.3	SE249506.035	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH16 1.7-1.8	SE249506.036	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
DUP1	SE249506.037	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
DUP2	SE249506.038	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
TRIP BLANK	SE249506.041	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023

### PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.1-0.2	SE249506.001	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH2 0.2-0.3	SE249506.002	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023

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 sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2 1.1-1.2	SE249506.003	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH3 0.2-0.3	SE249506.004	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH3 1.4-1.5	SE249506.005	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH3 3.0-3.1	SE249506.006	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH4 0.1-0.2	SE249506.007	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH4 1.0-1.1	SE249506.008	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH5 0.1-0.2	SE249506.009	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH5 0.7-0.8	SE249506.010	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH5 1.3-1.4	SE249506.011	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH6 0.1-0.2	SE249506.012	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH6 0.8-0.9	SE249506.013	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH7 0.1-0.2	SE249506.014	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH7 1.2-1.3	SE249506.015	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH7 2.8-2.9	SE249506.016	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH8 0.2-0.3	SE249506.017	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH8 0.6-0.7	SE249506.018	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH9 0.2-0.3	SE249506.019	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	26 Jun 2023
BH9 0.7-0.8	SE249506.020	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH9 1.4-1.5	SE249506.021	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH10 0.1-0.2	SE249506.022	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH10 0.3-0.4	SE249506.023	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH10 1.0-1.1	SE249506.024	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH11 0.2-0.3	SE249506.025	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH11 0.7-0.8	SE249506.026	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH11 1.1-1.2	SE249506.027	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH12 0.2-0.3	SE249506.028	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH12 0.7-0.8	SE249506.029	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH12 2.2-2.3	SE249506.030	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH13 0.1-0.2	SE249506.031	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH14 0.2-0.3	SE249506.032	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH15 0.2-0.3	SE249506.033	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH15 1.3-1.4	SE249506.034	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH16 0.2-0.3	SE249506.035	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH16 1.7-1.8	SE249506.036	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
DUP1	SE249506.037	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
DUP2	SE249506.038	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
TRIP BLANK	SE249506.041	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023

### PCBs in Soil

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.1-0.2	SE249506.001	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH2 0.2-0.3	SE249506.002	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH2 1.1-1.2	SE249506.003	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH3 0.2-0.3	SE249506.004	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH3 1.4-1.5	SE249506.005	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH3 3.0-3.1	SE249506.006	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH4 0.1-0.2	SE249506.007	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH4 1.0-1.1	SE249506.008	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH5 0.1-0.2	SE249506.009	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH5 0.7-0.8	SE249506.010	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH5 1.3-1.4	SE249506.011	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH6 0.1-0.2	SE249506.012	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH6 0.8-0.9	SE249506.013	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH7 0.1-0.2	SE249506.014	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH7 1.2-1.3	SE249506.015	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	27 Jun 2023
BH7 2.8-2.9	SE249506.016	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH8 0.2-0.3	SE249506.017	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH8 0.6-0.7	SE249506.018	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH9 0.2-0.3	SE249506.019	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH9 0.7-0.8	SE249506.020	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023



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 sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### PCBs in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH9 1.4-1.5	SE249506.021	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH10 0.1-0.2	SE249506.022	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH10 0.3-0.4	SE249506.023	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH10 1.0-1.1	SE249506.024	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH11 0.2-0.3	SE249506.025	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH11 0.7-0.8	SE249506.026	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH11 1.1-1.2	SE249506.027	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH12 0.2-0.3	SE249506.028	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH12 0.7-0.8	SE249506.029	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH12 2.2-2.3	SE249506.030	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH13 0.1-0.2	SE249506.031	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH14 0.2-0.3	SE249506.032	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH15 0.2-0.3	SE249506.033	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH15 1.3-1.4	SE249506.034	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH16 0.2-0.3	SE249506.035	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH16 1.7-1.8	SE249506.036	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
DUP1	SE249506.037	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
DUP2	SE249506.038	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
TRIP BLANK	SE249506.041	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023

### 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
BH1 0.1-0.2	SE249506.001	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH2 0.2-0.3	SE249506.002	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH2 1.1-1.2	SE249506.003	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH3 0.2-0.3	SE249506.004	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH3 1.4-1.5	SE249506.005	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH3 3.0-3.1	SE249506.006	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH4 0.1-0.2	SE249506.007	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH4 1.0-1.1	SE249506.008	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH5 0.1-0.2	SE249506.009	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH5 0.7-0.8	SE249506.010	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH5 1.3-1.4	SE249506.011	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH6 0.1-0.2	SE249506.012	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH6 0.8-0.9	SE249506.013	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH7 0.1-0.2	SE249506.014	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH7 1.2-1.3	SE249506.015	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH7 2.8-2.9	SE249506.016	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH8 0.2-0.3	SE249506.017	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH8 0.6-0.7	SE249506.018	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH9 0.2-0.3	SE249506.019	LB283181	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	26 Jun 2023
BH9 0.7-0.8	SE249506.020	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH9 1.4-1.5	SE249506.021	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH10 0.1-0.2	SE249506.022	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH10 0.3-0.4	SE249506.023	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH10 1.0-1.1	SE249506.024	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH11 0.2-0.3	SE249506.025	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH11 0.7-0.8	SE249506.026	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH11 1.1-1.2	SE249506.027	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH12 0.2-0.3	SE249506.028	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH12 0.7-0.8	SE249506.029	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH12 2.2-2.3	SE249506.030	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH13 0.1-0.2	SE249506.031	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH14 0.2-0.3	SE249506.032	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH15 0.2-0.3	SE249506.033	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH15 1.3-1.4	SE249506.034	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH16 0.2-0.3	SE249506.035	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
BH16 1.7-1.8	SE249506.036	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
DUP1	SE249506.037	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023
DUP2	SE249506.038	LB283189	19 Jun 2023	21 Jun 2023	16 Dec 2023	21 Jun 2023	16 Dec 2023	27 Jun 2023

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 sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-ENVJAN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
RINS1	SE249506.039	LB283237	19 Jun 2023	21 Jun 2023	16 Dec 2023	22 Jun 2023	16 Dec 2023	22 Jun 2023

### TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.1-0.2	SE249506.001	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH2 0.2-0.3	SE249506.002	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH2 1.1-1.2	SE249506.003	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH3 0.2-0.3	SE249506.004	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH3 1.4-1.5	SE249506.005	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH3 3.0-3.1	SE249506.006	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH4 0.1-0.2	SE249506.007	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH4 1.0-1.1	SE249506.008	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH5 0.1-0.2	SE249506.009	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH5 0.7-0.8	SE249506.010	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH5 1.3-1.4	SE249506.011	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH6 0.1-0.2	SE249506.012	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH6 0.8-0.9	SE249506.013	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH7 0.1-0.2	SE249506.014	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH7 1.2-1.3	SE249506.015	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH7 2.8-2.9	SE249506.016	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH8 0.2-0.3	SE249506.017	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH8 0.6-0.7	SE249506.018	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH9 0.2-0.3	SE249506.019	LB283179	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH9 0.7-0.8	SE249506.020	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH9 1.4-1.5	SE249506.021	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH10 0.1-0.2	SE249506.022	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH10 0.3-0.4	SE249506.023	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH10 1.0-1.1	SE249506.024	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH11 0.2-0.3	SE249506.025	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH11 0.7-0.8	SE249506.026	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH11 1.1-1.2	SE249506.027	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH12 0.2-0.3	SE249506.028	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH12 0.7-0.8	SE249506.029	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH12 2.2-2.3	SE249506.030	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH13 0.1-0.2	SE249506.031	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH14 0.2-0.3	SE249506.032	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH15 0.2-0.3	SE249506.033	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH15 1.3-1.4	SE249506.034	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH16 0.2-0.3	SE249506.035	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
BH16 1.7-1.8	SE249506.036	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
DUP1	SE249506.037	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
DUP2	SE249506.038	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023
TRIP BLANK	SE249506.041	LB283186	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	31 Jul 2023	28 Jun 2023

### VOC's in Soil

Method: ME-(AU)-ENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.1-0.2	SE249506.001	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH2 0.2-0.3	SE249506.002	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH2 1.1-1.2	SE249506.003	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH3 0.2-0.3	SE249506.004	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH3 1.4-1.5	SE249506.005	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH3 3.0-3.1	SE249506.006	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH4 0.1-0.2	SE249506.007	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH4 1.0-1.1	SE249506.008	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH5 0.1-0.2	SE249506.009	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH5 0.7-0.8	SE249506.010	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH5 1.3-1.4	SE249506.011	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH6 0.1-0.2	SE249506.012	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH6 0.8-0.9	SE249506.013	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH7 0.1-0.2	SE249506.014	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023

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 sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### VOC's in Soil (continued)

Method: ME-(AU)-ENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7 1.2-1.3	SE249506.015	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH7 2.8-2.9	SE249506.016	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH8 0.2-0.3	SE249506.017	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH8 0.6-0.7	SE249506.018	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH9 0.2-0.3	SE249506.019	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH9 0.7-0.8	SE249506.020	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH9 1.4-1.5	SE249506.021	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH10 0.1-0.2	SE249506.022	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH10 0.3-0.4	SE249506.023	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH10 1.0-1.1	SE249506.024	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH11 0.2-0.3	SE249506.025	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH11 0.7-0.8	SE249506.026	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH11 1.1-1.2	SE249506.027	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH12 0.2-0.3	SE249506.028	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH12 0.7-0.8	SE249506.029	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH12 2.2-2.3	SE249506.030	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH13 0.1-0.2	SE249506.031	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH14 0.2-0.3	SE249506.032	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH15 0.2-0.3	SE249506.033	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH15 1.3-1.4	SE249506.034	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH16 0.2-0.3	SE249506.035	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH16 1.7-1.8	SE249506.036	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
DUP1	SE249506.037	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
DUP2	SE249506.038	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
TRIP SPIKE	SE249506.040	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
TRIP BLANK	SE249506.041	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023

### Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-ENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.1-0.2	SE249506.001	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH2 0.2-0.3	SE249506.002	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH2 1.1-1.2	SE249506.003	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH3 0.2-0.3	SE249506.004	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH3 1.4-1.5	SE249506.005	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH3 3.0-3.1	SE249506.006	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH4 0.1-0.2	SE249506.007	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH4 1.0-1.1	SE249506.008	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH5 0.1-0.2	SE249506.009	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH5 0.7-0.8	SE249506.010	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH5 1.3-1.4	SE249506.011	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH6 0.1-0.2	SE249506.012	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH6 0.8-0.9	SE249506.013	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH7 0.1-0.2	SE249506.014	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH7 1.2-1.3	SE249506.015	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH7 2.8-2.9	SE249506.016	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH8 0.2-0.3	SE249506.017	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH8 0.6-0.7	SE249506.018	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH9 0.2-0.3	SE249506.019	LB283180	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH9 0.7-0.8	SE249506.020	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH9 1.4-1.5	SE249506.021	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH10 0.1-0.2	SE249506.022	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH10 0.3-0.4	SE249506.023	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH10 1.0-1.1	SE249506.024	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH11 0.2-0.3	SE249506.025	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH11 0.7-0.8	SE249506.026	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH11 1.1-1.2	SE249506.027	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH12 0.2-0.3	SE249506.028	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH12 0.7-0.8	SE249506.029	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH12 2.2-2.3	SE249506.030	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH13 0.1-0.2	SE249506.031	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023

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 sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-ENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH14 0.2-0.3	SE249506.032	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH15 0.2-0.3	SE249506.033	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH15 1.3-1.4	SE249506.034	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH16 0.2-0.3	SE249506.035	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
BH16 1.7-1.8	SE249506.036	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
DUP1	SE249506.037	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
DUP2	SE249506.038	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
TRIP SPIKE	SE249506.040	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023
TRIP BLANK	SE249506.041	LB283187	19 Jun 2023	21 Jun 2023	03 Jul 2023	21 Jun 2023	03 Jul 2023	27 Jun 2023

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH3 0.2-0.3	SE249506.004	%	60 - 130%	93
	BH4 0.1-0.2	SE249506.007	%	60 - 130%	97
	BH5 0.1-0.2	SE249506.009	%	60 - 130%	92
	BH6 0.1-0.2	SE249506.012	%	60 - 130%	96
	BH7 0.1-0.2	SE249506.014	%	60 - 130%	95
	BH7 1.2-1.3	SE249506.015	%	60 - 130%	98
	BH10 0.3-0.4	SE249506.023	%	60 - 130%	82
	BH11 0.2-0.3	SE249506.025	%	60 - 130%	82
	BH11 0.7-0.8	SE249506.026	%	60 - 130%	85
	BH15 0.2-0.3	SE249506.033	%	60 - 130%	86

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH3 0.2-0.3	SE249506.004	%	60 - 130%	86
	BH4 0.1-0.2	SE249506.007	%	60 - 130%	87
	BH5 0.1-0.2	SE249506.009	%	60 - 130%	90
	BH6 0.1-0.2	SE249506.012	%	60 - 130%	89
	BH7 0.1-0.2	SE249506.014	%	60 - 130%	89
	BH7 1.2-1.3	SE249506.015	%	60 - 130%	87
	BH10 0.3-0.4	SE249506.023	%	60 - 130%	88
	BH11 0.2-0.3	SE249506.025	%	60 - 130%	89
	BH11 0.7-0.8	SE249506.026	%	60 - 130%	90
	BH15 0.2-0.3	SE249506.033	%	60 - 130%	88
d14-p-terphenyl (Surrogate)	BH3 0.2-0.3	SE249506.004	%	60 - 130%	96
	BH4 0.1-0.2	SE249506.007	%	60 - 130%	96
	BH5 0.1-0.2	SE249506.009	%	60 - 130%	99
	BH6 0.1-0.2	SE249506.012	%	60 - 130%	97
	BH7 0.1-0.2	SE249506.014	%	60 - 130%	99
	BH7 1.2-1.3	SE249506.015	%	60 - 130%	95
	BH10 0.3-0.4	SE249506.023	%	60 - 130%	97
	BH11 0.2-0.3	SE249506.025	%	60 - 130%	97
	BH11 0.7-0.8	SE249506.026	%	60 - 130%	99
	BH15 0.2-0.3	SE249506.033	%	60 - 130%	97

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1 0.1-0.2	SE249506.001	%	70 - 130%	87
	BH2 0.2-0.3	SE249506.002	%	70 - 130%	88
	BH2 1.1-1.2	SE249506.003	%	70 - 130%	88
	BH3 0.2-0.3	SE249506.004	%	70 - 130%	86
	BH3 1.4-1.5	SE249506.005	%	70 - 130%	87
	BH3 3.0-3.1	SE249506.006	%	70 - 130%	86
	BH4 0.1-0.2	SE249506.007	%	70 - 130%	87
	BH4 1.0-1.1	SE249506.008	%	70 - 130%	88
	BH5 0.1-0.2	SE249506.009	%	70 - 130%	90
	BH5 0.7-0.8	SE249506.010	%	70 - 130%	89
	BH5 1.3-1.4	SE249506.011	%	70 - 130%	87
	BH6 0.1-0.2	SE249506.012	%	70 - 130%	89
	BH6 0.8-0.9	SE249506.013	%	70 - 130%	88
	BH7 0.1-0.2	SE249506.014	%	70 - 130%	89
	BH7 1.2-1.3	SE249506.015	%	70 - 130%	87
	BH7 2.8-2.9	SE249506.016	%	70 - 130%	99
	BH8 0.2-0.3	SE249506.017	%	70 - 130%	87
	BH8 0.6-0.7	SE249506.018	%	70 - 130%	87
	BH9 0.2-0.3	SE249506.019	%	70 - 130%	86
	BH9 0.7-0.8	SE249506.020	%	70 - 130%	88
	BH9 1.4-1.5	SE249506.021	%	70 - 130%	90
	BH10 0.1-0.2	SE249506.022	%	70 - 130%	89
	BH10 0.3-0.4	SE249506.023	%	70 - 130%	88
	BH10 1.0-1.1	SE249506.024	%	70 - 130%	88
	BH11 0.2-0.3	SE249506.025	%	70 - 130%	89
	BH11 0.7-0.8	SE249506.026	%	70 - 130%	90

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %	
2-fluorobiphenyl (Surrogate)	BH11 1.1-1.2	SE249506.027	%	70 - 130%	91	
	BH12 0.2-0.3	SE249506.028	%	70 - 130%	86	
	BH12 0.7-0.8	SE249506.029	%	70 - 130%	89	
	BH12 2.2-2.3	SE249506.030	%	70 - 130%	90	
	BH13 0.1-0.2	SE249506.031	%	70 - 130%	93	
	BH14 0.2-0.3	SE249506.032	%	70 - 130%	91	
	BH15 0.2-0.3	SE249506.033	%	70 - 130%	88	
	BH15 1.3-1.4	SE249506.034	%	70 - 130%	89	
	BH16 0.2-0.3	SE249506.035	%	70 - 130%	83	
	BH16 1.7-1.8	SE249506.036	%	70 - 130%	94	
	DUP1	SE249506.037	%	70 - 130%	89	
	DUP2	SE249506.038	%	70 - 130%	91	
	d14-p-terphenyl (Surrogate)	BH1 0.1-0.2	SE249506.001	%	70 - 130%	99
		BH2 0.2-0.3	SE249506.002	%	70 - 130%	104
BH2 1.1-1.2		SE249506.003	%	70 - 130%	96	
BH3 0.2-0.3		SE249506.004	%	70 - 130%	96	
BH3 1.4-1.5		SE249506.005	%	70 - 130%	98	
BH3 3.0-3.1		SE249506.006	%	70 - 130%	96	
BH4 0.1-0.2		SE249506.007	%	70 - 130%	96	
BH4 1.0-1.1		SE249506.008	%	70 - 130%	97	
BH5 0.1-0.2		SE249506.009	%	70 - 130%	99	
BH5 0.7-0.8		SE249506.010	%	70 - 130%	99	
BH5 1.3-1.4		SE249506.011	%	70 - 130%	96	
BH6 0.1-0.2		SE249506.012	%	70 - 130%	97	
BH6 0.8-0.9		SE249506.013	%	70 - 130%	97	
BH7 0.1-0.2		SE249506.014	%	70 - 130%	99	
BH7 1.2-1.3		SE249506.015	%	70 - 130%	95	
BH7 2.8-2.9		SE249506.016	%	70 - 130%	103	
BH8 0.2-0.3		SE249506.017	%	70 - 130%	95	
BH8 0.6-0.7		SE249506.018	%	70 - 130%	96	
BH9 0.2-0.3		SE249506.019	%	70 - 130%	96	
BH9 0.7-0.8		SE249506.020	%	70 - 130%	98	
BH9 1.4-1.5		SE249506.021	%	70 - 130%	97	
BH10 0.1-0.2		SE249506.022	%	70 - 130%	97	
BH10 0.3-0.4		SE249506.023	%	70 - 130%	97	
BH10 1.0-1.1		SE249506.024	%	70 - 130%	98	
BH11 0.2-0.3		SE249506.025	%	70 - 130%	97	
BH11 0.7-0.8		SE249506.026	%	70 - 130%	99	
BH11 1.1-1.2		SE249506.027	%	70 - 130%	98	
BH12 0.2-0.3		SE249506.028	%	70 - 130%	98	
BH12 0.7-0.8		SE249506.029	%	70 - 130%	99	
BH12 2.2-2.3		SE249506.030	%	70 - 130%	100	
BH13 0.1-0.2		SE249506.031	%	70 - 130%	100	
BH14 0.2-0.3		SE249506.032	%	70 - 130%	103	
BH15 0.2-0.3	SE249506.033	%	70 - 130%	97		
BH15 1.3-1.4	SE249506.034	%	70 - 130%	99		
BH16 0.2-0.3	SE249506.035	%	70 - 130%	92		
BH16 1.7-1.8	SE249506.036	%	70 - 130%	105		
DUP1	SE249506.037	%	70 - 130%	95		
DUP2	SE249506.038	%	70 - 130%	99		
d5-nitrobenzene (Surrogate)	BH1 0.1-0.2	SE249506.001	%	70 - 130%	86	
	BH2 0.2-0.3	SE249506.002	%	70 - 130%	89	
	BH2 1.1-1.2	SE249506.003	%	70 - 130%	89	
	BH3 0.2-0.3	SE249506.004	%	70 - 130%	86	
	BH3 1.4-1.5	SE249506.005	%	70 - 130%	88	
	BH3 3.0-3.1	SE249506.006	%	70 - 130%	87	
	BH4 0.1-0.2	SE249506.007	%	70 - 130%	87	
	BH4 1.0-1.1	SE249506.008	%	70 - 130%	89	
	BH5 0.1-0.2	SE249506.009	%	70 - 130%	89	
	BH5 0.7-0.8	SE249506.010	%	70 - 130%	89	
	BH5 1.3-1.4	SE249506.011	%	70 - 130%	88	

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d5-nitrobenzene (Surrogate)	BH6 0.1-0.2	SE249506.012	%	70 - 130%	89
	BH6 0.8-0.9	SE249506.013	%	70 - 130%	88
	BH7 0.1-0.2	SE249506.014	%	70 - 130%	89
	BH7 1.2-1.3	SE249506.015	%	70 - 130%	89
	BH7 2.8-2.9	SE249506.016	%	70 - 130%	100
	BH8 0.2-0.3	SE249506.017	%	70 - 130%	86
	BH8 0.6-0.7	SE249506.018	%	70 - 130%	88
	BH9 0.2-0.3	SE249506.019	%	70 - 130%	86
	BH9 0.7-0.8	SE249506.020	%	70 - 130%	95
	BH9 1.4-1.5	SE249506.021	%	70 - 130%	95
	BH10 0.1-0.2	SE249506.022	%	70 - 130%	95
	BH10 0.3-0.4	SE249506.023	%	70 - 130%	90
	BH10 1.0-1.1	SE249506.024	%	70 - 130%	93
	BH11 0.2-0.3	SE249506.025	%	70 - 130%	92
	BH11 0.7-0.8	SE249506.026	%	70 - 130%	94
	BH11 1.1-1.2	SE249506.027	%	70 - 130%	95
	BH12 0.2-0.3	SE249506.028	%	70 - 130%	90
	BH12 0.7-0.8	SE249506.029	%	70 - 130%	94
	BH12 2.2-2.3	SE249506.030	%	70 - 130%	96
	BH13 0.1-0.2	SE249506.031	%	70 - 130%	96
	BH14 0.2-0.3	SE249506.032	%	70 - 130%	95
	BH15 0.2-0.3	SE249506.033	%	70 - 130%	93
	BH15 1.3-1.4	SE249506.034	%	70 - 130%	92
	BH16 0.2-0.3	SE249506.035	%	70 - 130%	83
BH16 1.7-1.8	SE249506.036	%	70 - 130%	100	
DUP1	SE249506.037	%	70 - 130%	90	
DUP2	SE249506.038	%	70 - 130%	95	

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	BH3 0.2-0.3	SE249506.004	%	60 - 130%	95
	BH4 0.1-0.2	SE249506.007	%	60 - 130%	100
	BH5 0.1-0.2	SE249506.009	%	60 - 130%	94
	BH6 0.1-0.2	SE249506.012	%	60 - 130%	98
	BH7 0.1-0.2	SE249506.014	%	60 - 130%	97
	BH7 1.2-1.3	SE249506.015	%	60 - 130%	101
	BH10 0.3-0.4	SE249506.023	%	60 - 130%	84
	BH11 0.2-0.3	SE249506.025	%	60 - 130%	84
	BH11 0.7-0.8	SE249506.026	%	60 - 130%	87
	BH15 0.2-0.3	SE249506.033	%	60 - 130%	88

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1 0.1-0.2	SE249506.001	%	60 - 130%	118
	BH2 0.2-0.3	SE249506.002	%	60 - 130%	100
	BH2 1.1-1.2	SE249506.003	%	60 - 130%	112
	BH3 0.2-0.3	SE249506.004	%	60 - 130%	99
	BH3 1.4-1.5	SE249506.005	%	60 - 130%	104
	BH3 3.0-3.1	SE249506.006	%	60 - 130%	100
	BH4 0.1-0.2	SE249506.007	%	60 - 130%	108
	BH4 1.0-1.1	SE249506.008	%	60 - 130%	107
	BH5 0.1-0.2	SE249506.009	%	60 - 130%	102
	BH5 0.7-0.8	SE249506.010	%	60 - 130%	100
	BH5 1.3-1.4	SE249506.011	%	60 - 130%	109
	BH6 0.1-0.2	SE249506.012	%	60 - 130%	102
	BH6 0.8-0.9	SE249506.013	%	60 - 130%	92
	BH7 0.1-0.2	SE249506.014	%	60 - 130%	107
	BH7 1.2-1.3	SE249506.015	%	60 - 130%	100
	BH7 2.8-2.9	SE249506.016	%	60 - 130%	90
	BH8 0.2-0.3	SE249506.017	%	60 - 130%	92
	BH8 0.6-0.7	SE249506.018	%	60 - 130%	98
	BH9 0.2-0.3	SE249506.019	%	60 - 130%	106

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %	
Bromofluorobenzene (Surrogate)	BH9 0.7-0.8	SE249506.020	%	60 - 130%	108	
	BH9 1.4-1.5	SE249506.021	%	60 - 130%	93	
	BH10 0.1-0.2	SE249506.022	%	60 - 130%	104	
	BH10 0.3-0.4	SE249506.023	%	60 - 130%	97	
	BH10 1.0-1.1	SE249506.024	%	60 - 130%	108	
	BH11 0.2-0.3	SE249506.025	%	60 - 130%	104	
	BH11 0.7-0.8	SE249506.026	%	60 - 130%	106	
	BH11 1.1-1.2	SE249506.027	%	60 - 130%	110	
	BH12 0.2-0.3	SE249506.028	%	60 - 130%	109	
	BH12 0.7-0.8	SE249506.029	%	60 - 130%	106	
	BH12 2.2-2.3	SE249506.030	%	60 - 130%	103	
	BH13 0.1-0.2	SE249506.031	%	60 - 130%	114	
	BH14 0.2-0.3	SE249506.032	%	60 - 130%	107	
	BH15 0.2-0.3	SE249506.033	%	60 - 130%	107	
	BH15 1.3-1.4	SE249506.034	%	60 - 130%	107	
	BH16 0.2-0.3	SE249506.035	%	60 - 130%	108	
	BH16 1.7-1.8	SE249506.036	%	60 - 130%	107	
	DUP1	SE249506.037	%	60 - 130%	99	
	DUP2	SE249506.038	%	60 - 130%	106	
	TRIP SPIKE	SE249506.040	%	60 - 130%	111	
	TRIP BLANK	SE249506.041	%	60 - 130%	102	
	d4-1,2-dichloroethane (Surrogate)	BH1 0.1-0.2	SE249506.001	%	60 - 130%	113
		BH2 0.2-0.3	SE249506.002	%	60 - 130%	102
		BH2 1.1-1.2	SE249506.003	%	60 - 130%	115
BH3 0.2-0.3		SE249506.004	%	60 - 130%	106	
BH3 1.4-1.5		SE249506.005	%	60 - 130%	107	
BH3 3.0-3.1		SE249506.006	%	60 - 130%	102	
BH4 0.1-0.2		SE249506.007	%	60 - 130%	114	
BH4 1.0-1.1		SE249506.008	%	60 - 130%	114	
BH5 0.1-0.2		SE249506.009	%	60 - 130%	108	
BH5 0.7-0.8		SE249506.010	%	60 - 130%	103	
BH5 1.3-1.4		SE249506.011	%	60 - 130%	115	
BH6 0.1-0.2		SE249506.012	%	60 - 130%	109	
BH6 0.8-0.9		SE249506.013	%	60 - 130%	99	
BH7 0.1-0.2		SE249506.014	%	60 - 130%	117	
BH7 1.2-1.3		SE249506.015	%	60 - 130%	111	
BH7 2.8-2.9		SE249506.016	%	60 - 130%	94	
BH8 0.2-0.3		SE249506.017	%	60 - 130%	100	
BH8 0.6-0.7		SE249506.018	%	60 - 130%	108	
BH9 0.2-0.3		SE249506.019	%	60 - 130%	119	
BH9 0.7-0.8		SE249506.020	%	60 - 130%	99	
BH9 1.4-1.5		SE249506.021	%	60 - 130%	88	
BH10 0.1-0.2		SE249506.022	%	60 - 130%	101	
BH10 0.3-0.4		SE249506.023	%	60 - 130%	97	
BH10 1.0-1.1		SE249506.024	%	60 - 130%	102	
BH11 0.2-0.3		SE249506.025	%	60 - 130%	106	
BH11 0.7-0.8		SE249506.026	%	60 - 130%	98	
BH11 1.1-1.2		SE249506.027	%	60 - 130%	104	
BH12 0.2-0.3		SE249506.028	%	60 - 130%	107	
BH12 0.7-0.8		SE249506.029	%	60 - 130%	101	
BH12 2.2-2.3		SE249506.030	%	60 - 130%	100	
BH13 0.1-0.2		SE249506.031	%	60 - 130%	109	
BH14 0.2-0.3		SE249506.032	%	60 - 130%	106	
BH15 0.2-0.3	SE249506.033	%	60 - 130%	103		
BH15 1.3-1.4	SE249506.034	%	60 - 130%	105		
BH16 0.2-0.3	SE249506.035	%	60 - 130%	108		
BH16 1.7-1.8	SE249506.036	%	60 - 130%	102		
DUP1	SE249506.037	%	60 - 130%	93		
DUP2	SE249506.038	%	60 - 130%	103		
TRIP SPIKE	SE249506.040	%	60 - 130%	115		
TRIP BLANK	SE249506.041	%	60 - 130%	100		



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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	BH1 0.1-0.2	SE249506.001	%	60 - 130%	95
	BH2 0.2-0.3	SE249506.002	%	60 - 130%	84
	BH2 1.1-1.2	SE249506.003	%	60 - 130%	94
	BH3 0.2-0.3	SE249506.004	%	60 - 130%	86
	BH3 1.4-1.5	SE249506.005	%	60 - 130%	89
	BH3 3.0-3.1	SE249506.006	%	60 - 130%	84
	BH4 0.1-0.2	SE249506.007	%	60 - 130%	93
	BH4 1.0-1.1	SE249506.008	%	60 - 130%	92
	BH5 0.1-0.2	SE249506.009	%	60 - 130%	88
	BH5 0.7-0.8	SE249506.010	%	60 - 130%	85
	BH5 1.3-1.4	SE249506.011	%	60 - 130%	93
	BH6 0.1-0.2	SE249506.012	%	60 - 130%	90
	BH6 0.8-0.9	SE249506.013	%	60 - 130%	82
	BH7 0.1-0.2	SE249506.014	%	60 - 130%	94
	BH7 1.2-1.3	SE249506.015	%	60 - 130%	89
	BH7 2.8-2.9	SE249506.016	%	60 - 130%	76
	BH8 0.2-0.3	SE249506.017	%	60 - 130%	83
	BH8 0.6-0.7	SE249506.018	%	60 - 130%	86
	BH9 0.2-0.3	SE249506.019	%	60 - 130%	94
	BH9 0.7-0.8	SE249506.020	%	60 - 130%	99
	BH9 1.4-1.5	SE249506.021	%	60 - 130%	89
	BH10 0.1-0.2	SE249506.022	%	60 - 130%	102
	BH10 0.3-0.4	SE249506.023	%	60 - 130%	97
	BH10 1.0-1.1	SE249506.024	%	60 - 130%	104
	BH11 0.2-0.3	SE249506.025	%	60 - 130%	106
	BH11 0.7-0.8	SE249506.026	%	60 - 130%	99
	BH11 1.1-1.2	SE249506.027	%	60 - 130%	105
	BH12 0.2-0.3	SE249506.028	%	60 - 130%	107
	BH12 0.7-0.8	SE249506.029	%	60 - 130%	102
	BH12 2.2-2.3	SE249506.030	%	60 - 130%	103
	BH13 0.1-0.2	SE249506.031	%	60 - 130%	111
	BH14 0.2-0.3	SE249506.032	%	60 - 130%	107
BH15 0.2-0.3	SE249506.033	%	60 - 130%	105	
BH15 1.3-1.4	SE249506.034	%	60 - 130%	107	
BH16 0.2-0.3	SE249506.035	%	60 - 130%	108	
BH16 1.7-1.8	SE249506.036	%	60 - 130%	105	
DUP1	SE249506.037	%	60 - 130%	95	
DUP2	SE249506.038	%	60 - 130%	104	
TRIP SPIKE	SE249506.040	%	60 - 130%	114	
TRIP BLANK	SE249506.041	%	60 - 130%	102	

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1 0.1-0.2	SE249506.001	%	60 - 130%	118
	BH2 0.2-0.3	SE249506.002	%	60 - 130%	100
	BH2 1.1-1.2	SE249506.003	%	60 - 130%	112
	BH3 0.2-0.3	SE249506.004	%	60 - 130%	99
	BH3 1.4-1.5	SE249506.005	%	60 - 130%	104
	BH3 3.0-3.1	SE249506.006	%	60 - 130%	100
	BH4 0.1-0.2	SE249506.007	%	60 - 130%	108
	BH4 1.0-1.1	SE249506.008	%	60 - 130%	107
	BH5 0.1-0.2	SE249506.009	%	60 - 130%	102
	BH5 0.7-0.8	SE249506.010	%	60 - 130%	100
	BH5 1.3-1.4	SE249506.011	%	60 - 130%	109
	BH6 0.1-0.2	SE249506.012	%	60 - 130%	102
	BH6 0.8-0.9	SE249506.013	%	60 - 130%	92
	BH7 0.1-0.2	SE249506.014	%	60 - 130%	107
	BH7 1.2-1.3	SE249506.015	%	60 - 130%	100
	BH7 2.8-2.9	SE249506.016	%	60 - 130%	90
	BH8 0.2-0.3	SE249506.017	%	60 - 130%	92
	BH8 0.6-0.7	SE249506.018	%	60 - 130%	98

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH9 0.2-0.3	SE249506.019	%	60 - 130%	106
	BH9 0.7-0.8	SE249506.020	%	60 - 130%	108
	BH9 1.4-1.5	SE249506.021	%	60 - 130%	93
	BH10 0.1-0.2	SE249506.022	%	60 - 130%	104
	BH10 0.3-0.4	SE249506.023	%	60 - 130%	97
	BH10 1.0-1.1	SE249506.024	%	60 - 130%	108
	BH11 0.2-0.3	SE249506.025	%	60 - 130%	104
	BH11 0.7-0.8	SE249506.026	%	60 - 130%	106
	BH11 1.1-1.2	SE249506.027	%	60 - 130%	110
	BH12 0.2-0.3	SE249506.028	%	60 - 130%	109
	BH12 0.7-0.8	SE249506.029	%	60 - 130%	106
	BH12 2.2-2.3	SE249506.030	%	60 - 130%	103
	BH13 0.1-0.2	SE249506.031	%	60 - 130%	114
	BH14 0.2-0.3	SE249506.032	%	60 - 130%	107
	BH15 0.2-0.3	SE249506.033	%	60 - 130%	107
	BH15 1.3-1.4	SE249506.034	%	60 - 130%	107
	BH16 0.2-0.3	SE249506.035	%	60 - 130%	108
	BH16 1.7-1.8	SE249506.036	%	60 - 130%	107
	DUP1	SE249506.037	%	60 - 130%	99
	DUP2	SE249506.038	%	60 - 130%	106
	TRIP BLANK	SE249506.041	%	60 - 130%	102
d4-1,2-dichloroethane (Surrogate)	BH1 0.1-0.2	SE249506.001	%	60 - 130%	113
	BH2 0.2-0.3	SE249506.002	%	60 - 130%	102
	BH2 1.1-1.2	SE249506.003	%	60 - 130%	115
	BH3 0.2-0.3	SE249506.004	%	60 - 130%	106
	BH3 1.4-1.5	SE249506.005	%	60 - 130%	107
	BH3 3.0-3.1	SE249506.006	%	60 - 130%	102
	BH4 0.1-0.2	SE249506.007	%	60 - 130%	114
	BH4 1.0-1.1	SE249506.008	%	60 - 130%	114
	BH5 0.1-0.2	SE249506.009	%	60 - 130%	108
	BH5 0.7-0.8	SE249506.010	%	60 - 130%	103
	BH5 1.3-1.4	SE249506.011	%	60 - 130%	115
	BH6 0.1-0.2	SE249506.012	%	60 - 130%	109
	BH6 0.8-0.9	SE249506.013	%	60 - 130%	99
	BH7 0.1-0.2	SE249506.014	%	60 - 130%	117
	BH7 1.2-1.3	SE249506.015	%	60 - 130%	111
	BH7 2.8-2.9	SE249506.016	%	60 - 130%	94
	BH8 0.2-0.3	SE249506.017	%	60 - 130%	100
	BH8 0.6-0.7	SE249506.018	%	60 - 130%	108
	BH9 0.2-0.3	SE249506.019	%	60 - 130%	119
	BH9 0.7-0.8	SE249506.020	%	60 - 130%	99
	BH9 1.4-1.5	SE249506.021	%	60 - 130%	88
	BH10 0.1-0.2	SE249506.022	%	60 - 130%	101
	BH10 0.3-0.4	SE249506.023	%	60 - 130%	97
	BH10 1.0-1.1	SE249506.024	%	60 - 130%	102
	BH11 0.2-0.3	SE249506.025	%	60 - 130%	106
	BH11 0.7-0.8	SE249506.026	%	60 - 130%	98
	BH11 1.1-1.2	SE249506.027	%	60 - 130%	104
	BH12 0.2-0.3	SE249506.028	%	60 - 130%	107
	BH12 0.7-0.8	SE249506.029	%	60 - 130%	101
	BH12 2.2-2.3	SE249506.030	%	60 - 130%	100
	BH13 0.1-0.2	SE249506.031	%	60 - 130%	109
	BH14 0.2-0.3	SE249506.032	%	60 - 130%	106
	BH15 0.2-0.3	SE249506.033	%	60 - 130%	103
BH15 1.3-1.4	SE249506.034	%	60 - 130%	105	
BH16 0.2-0.3	SE249506.035	%	60 - 130%	108	
BH16 1.7-1.8	SE249506.036	%	60 - 130%	102	
DUP1	SE249506.037	%	60 - 130%	93	
DUP2	SE249506.038	%	60 - 130%	103	
TRIP BLANK	SE249506.041	%	60 - 130%	100	
d8-toluene (Surrogate)	BH1 0.1-0.2	SE249506.001	%	60 - 130%	95

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	BH2 0.2-0.3	SE249506.002	%	60 - 130%	84
	BH2 1.1-1.2	SE249506.003	%	60 - 130%	94
	BH3 0.2-0.3	SE249506.004	%	60 - 130%	86
	BH3 1.4-1.5	SE249506.005	%	60 - 130%	89
	BH3 3.0-3.1	SE249506.006	%	60 - 130%	84
	BH4 0.1-0.2	SE249506.007	%	60 - 130%	93
	BH4 1.0-1.1	SE249506.008	%	60 - 130%	92
	BH5 0.1-0.2	SE249506.009	%	60 - 130%	88
	BH5 0.7-0.8	SE249506.010	%	60 - 130%	85
	BH5 1.3-1.4	SE249506.011	%	60 - 130%	93
	BH6 0.1-0.2	SE249506.012	%	60 - 130%	90
	BH6 0.8-0.9	SE249506.013	%	60 - 130%	82
	BH7 0.1-0.2	SE249506.014	%	60 - 130%	94
	BH7 1.2-1.3	SE249506.015	%	60 - 130%	89
	BH7 2.8-2.9	SE249506.016	%	60 - 130%	76
	BH8 0.2-0.3	SE249506.017	%	60 - 130%	83
	BH8 0.6-0.7	SE249506.018	%	60 - 130%	86
	BH9 0.2-0.3	SE249506.019	%	60 - 130%	94
	BH9 0.7-0.8	SE249506.020	%	60 - 130%	99
	BH9 1.4-1.5	SE249506.021	%	60 - 130%	89
	BH10 0.1-0.2	SE249506.022	%	60 - 130%	102
	BH10 0.3-0.4	SE249506.023	%	60 - 130%	97
	BH10 1.0-1.1	SE249506.024	%	60 - 130%	104
	BH11 0.2-0.3	SE249506.025	%	60 - 130%	106
	BH11 0.7-0.8	SE249506.026	%	60 - 130%	99
	BH11 1.1-1.2	SE249506.027	%	60 - 130%	105
	BH12 0.2-0.3	SE249506.028	%	60 - 130%	107
	BH12 0.7-0.8	SE249506.029	%	60 - 130%	102
	BH12 2.2-2.3	SE249506.030	%	60 - 130%	103
	BH13 0.1-0.2	SE249506.031	%	60 - 130%	111
	BH14 0.2-0.3	SE249506.032	%	60 - 130%	107
	BH15 0.2-0.3	SE249506.033	%	60 - 130%	105
	BH15 1.3-1.4	SE249506.034	%	60 - 130%	107
BH16 0.2-0.3	SE249506.035	%	60 - 130%	108	
BH16 1.7-1.8	SE249506.036	%	60 - 130%	105	
DUP1	SE249506.037	%	60 - 130%	95	
DUP2	SE249506.038	%	60 - 130%	104	
TRIP BLANK	SE249506.041	%	60 - 130%	102	

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.

Mercury (dissolved) in Water

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

Sample Number	Parameter	Units	LOR	Result
LB283549.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB283182.001	Mercury	mg/kg	0.05	<0.05
LB283247.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB283179.001	Alpha BHC	mg/kg	0.1	<0.1
	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	Lindane (gamma BHC)	mg/kg	0.1	<0.1
	Delta BHC	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Isodrin	mg/kg	0.1	<0.1
	Heptachlor epoxide	mg/kg	0.1	<0.1
	Gamma Chlordane	mg/kg	0.1	<0.1
	Alpha Chlordane	mg/kg	0.1	<0.1
	Alpha Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.2	<0.2
	Endrin	mg/kg	0.2	<0.2
	Beta Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDD	mg/kg	0.1	<0.1
	Endrin aldehyde	mg/kg	0.1	<0.1
	Endosulfan sulphate	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
	Endrin ketone	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
	Mirex	mg/kg	0.1	<0.1
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	91
LB283186.001	Alpha BHC	mg/kg	0.1	<0.1
	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	Lindane (gamma BHC)	mg/kg	0.1	<0.1
	Delta BHC	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Isodrin	mg/kg	0.1	<0.1
	Heptachlor epoxide	mg/kg	0.1	<0.1
	Gamma Chlordane	mg/kg	0.1	<0.1
	Alpha Chlordane	mg/kg	0.1	<0.1
	Alpha Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.2	<0.2
	Endrin	mg/kg	0.2	<0.2
	Beta Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDD	mg/kg	0.1	<0.1
	Endrin aldehyde	mg/kg	0.1	<0.1
	Endosulfan sulphate	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
	Endrin ketone	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
	Mirex	mg/kg	0.1	<0.1
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	79

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.

OP Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	
LB283179.001	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	
	Bromophos Ethyl	mg/kg	0.2	<0.2	
	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	
	Diazinon (Dimpylate)	mg/kg	0.5	<0.5	
	Dichlorvos	mg/kg	0.5	<0.5	
	Dimethoate	mg/kg	0.5	<0.5	
	Ethion	mg/kg	0.2	<0.2	
	Fenitrothion	mg/kg	0.2	<0.2	
	Malathion	mg/kg	0.2	<0.2	
	Methidathion	mg/kg	0.5	<0.5	
	Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	85
		d14-p-terphenyl (Surrogate)	%	-	95
	LB283186.001	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
Bromophos Ethyl		mg/kg	0.2	<0.2	
Chlorpyrifos (Chlorpyrifos Ethyl)		mg/kg	0.2	<0.2	
Diazinon (Dimpylate)		mg/kg	0.5	<0.5	
Dichlorvos		mg/kg	0.5	<0.5	
Dimethoate		mg/kg	0.5	<0.5	
Ethion		mg/kg	0.2	<0.2	
Fenitrothion		mg/kg	0.2	<0.2	
Malathion		mg/kg	0.2	<0.2	
Methidathion		mg/kg	0.5	<0.5	
Parathion-ethyl (Parathion)		mg/kg	0.2	<0.2	
Surrogates		2-fluorobiphenyl (Surrogate)	%	-	85
		d14-p-terphenyl (Surrogate)	%	-	95

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	
LB283179.001	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)	%	-	82
		2-fluorobiphenyl (Surrogate)	%	-	85
	d14-p-terphenyl (Surrogate)	%	-	95	
LB283186.001	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	

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 Soil (continued)**

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

Sample Number	Parameter	Units	LOR	Result	
LB283186.001	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)	%	-	91
		2-fluorobiphenyl (Surrogate)	%	-	85
		d14-p-terphenyl (Surrogate)	%	-	95

**PCBs in Soil**

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

Sample Number	Parameter	Units	LOR	Result
LB283179.001	Arochlor 1016	mg/kg	0.2	<0.2
	Arochlor 1221	mg/kg	0.2	<0.2
	Arochlor 1232	mg/kg	0.2	<0.2
	Arochlor 1242	mg/kg	0.2	<0.2
	Arochlor 1248	mg/kg	0.2	<0.2
	Arochlor 1254	mg/kg	0.2	<0.2
	Arochlor 1260	mg/kg	0.2	<0.2
	Arochlor 1262	mg/kg	0.2	<0.2
	Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1
Surrogates	TCMX (Surrogate)	%	-	94
LB283186.001	Arochlor 1016	mg/kg	0.2	<0.2
	Arochlor 1221	mg/kg	0.2	<0.2
	Arochlor 1232	mg/kg	0.2	<0.2
	Arochlor 1242	mg/kg	0.2	<0.2
	Arochlor 1248	mg/kg	0.2	<0.2
	Arochlor 1254	mg/kg	0.2	<0.2
	Arochlor 1260	mg/kg	0.2	<0.2
	Arochlor 1262	mg/kg	0.2	<0.2
	Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1
Surrogates	TCMX (Surrogate)	%	-	77

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

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

Sample Number	Parameter	Units	LOR	Result
LB283181.001	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
LB283189.001	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
LB283237.001	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
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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.

**TRH (Total Recoverable Hydrocarbons) in Soil (continued)**

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

Sample Number	Parameter	Units	LOR	Result
LB283179.001	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
LB283186.001	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

**VOC's in Soil**

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

Sample Number	Parameter	Units	LOR	Result	
LB283180.001	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)	%	-
	d8-toluene (Surrogate)		%	-	101
	Bromofluorobenzene (Surrogate)		%	-	121
	Totals	Total BTEX*	mg/kg	0.6	<0.6
LB283187.001	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)	%	-
	d8-toluene (Surrogate)		%	-	119
	Bromofluorobenzene (Surrogate)		%	-	123
	Totals	Total BTEX*	mg/kg	0.6	<0.6

**Volatile Petroleum Hydrocarbons in Soil**

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

Sample Number	Parameter	Units	LOR	Result
LB283180.001	TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-
LB283187.001	TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 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:  $MAD = 100 \times SDL / Mean + LR$   
 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 identifier 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 give a different calculated RPD.

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249506.010	LB283182.014	Mercury	mg/kg	0.05	0.41	0.48	41	16
SE249506.019	LB283182.024	Mercury	mg/kg	0.05	0.09	0.08	88	9
SE249506.029	LB283247.014	Mercury	mg/kg	0.05	0.08	0.08	95	5
SE249506.038	LB283247.024	Mercury	mg/kg	0.05	0.09	0.10	82	6

Moisture Content

Method: ME-(AU)-[ENV]AN022

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249506.010	LB283183.011	% Moisture	%w/w	1	11.8	11.6	39	2
SE249506.019	LB283183.021	% Moisture	%w/w	1	15.9	15.2	36	5
SE249506.029	LB283517.011	% Moisture	%w/w	1	15.0	15.6	37	4
SE249506.041	LB283517.022	% Moisture	%w/w	1	<1.0	<1.0	200	0

OC Pesticides in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE249506.015	LB283179.026	Alpha BHC	mg/kg	0.1	<0.1	0.0002303752	200	0	
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	0.0002695245	200	0	
		Beta BHC	mg/kg	0.1	<0.1	0.0010699713	200	0	
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	0.0089408012	200	0	
		Delta BHC	mg/kg	0.1	<0.1	0.0039253626	200	0	
		Heptachlor	mg/kg	0.1	<0.1	0.0021147550	200	0	
		Aldrin	mg/kg	0.1	<0.1	0.0006589440	200	0	
		Isodrin	mg/kg	0.1	<0.1	0.0127566002	200	0	
		Heptachlor epoxide	mg/kg	0.1	<0.1	0.0006817892	200	0	
		Gamma Chlordane	mg/kg	0.1	<0.1	0.0067733081	200	0	
		Alpha Chlordane	mg/kg	0.1	<0.1	0.0024557819	200	0	
		Alpha Endosulfan	mg/kg	0.2	<0.2	0.0017484118	200	0	
		o,p'-DDE*	mg/kg	0.1	<0.1	0.0017484118	200	0	
		p,p'-DDE	mg/kg	0.1	4.4	4.3253880270	32	1	
		Dieldrin	mg/kg	0.2	<0.2	0.0139042081	200	0	
		Endrin	mg/kg	0.2	<0.2	0.0018888441	200	0	
		Beta Endosulfan	mg/kg	0.2	<0.2	0	200	0	
		o,p'-DDD*	mg/kg	0.1	<0.1	0	200	0	
		p,p'-DDD	mg/kg	0.1	0.4	0.3706857701	56	7	
		Endrin aldehyde	mg/kg	0.1	<0.1	0.0013302096	200	0	
		Endosulfan sulphate	mg/kg	0.1	<0.1	0.0033866975	200	0	
		o,p'-DDT*	mg/kg	0.1	<0.1	0.1000152172	132	0	
		p,p'-DDT	mg/kg	0.1	0.5	0.3129028674	55	42	
		Endrin ketone	mg/kg	0.1	<0.1	0.0099225160	200	0	
		Methoxychlor	mg/kg	0.1	<0.1	0.0208465693	200	0	
		Mirex	mg/kg	0.1	<0.1	0.0124629634	200	0	
		trans-Nonachlor	mg/kg	0.1	<0.1	0.0077045019	200	0	
		Total CLP OC Pesticides	mg/kg	1	5	5.1089918818	49	3	
		Total OC VIC EPA	mg/kg	1	5	5.0089766646	49	5	
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.1455339165	30	1

OP Pesticides in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE249506.015	LB283179.026	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	0.0007698328	200	0	
		Bromophos Ethyl	mg/kg	0.2	<0.2	0	200	0	
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	0.1441428762	200	0	
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	0.0851224637	200	0	
		Dichlorvos	mg/kg	0.5	<0.5	0.0007896142	200	0	
		Dimethoate	mg/kg	0.5	<0.5	0.0087370728	200	0	
		Ethion	mg/kg	0.2	<0.2	0	200	0	
		Fenitrothion	mg/kg	0.2	<0.2	0	200	0	
		Malathion	mg/kg	0.2	<0.2	0.0106863191	200	0	
		Methidathion	mg/kg	0.5	<0.5	0.0013889835	200	0	
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	0.0002207603	200	0	
		Total OP Pesticides*	mg/kg	1.7	<1.7	0	200	0	
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4440083092	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4865961367	30	2



Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 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:  $MAD = 100 \times SDL / Mean + LR$   
 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 identifier 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 give a different calculated RPD.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %		
SE249506.010	LB283179.014	Naphthalene	mg/kg	0.1	<0.1	<0.1	150	0		
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0		
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	193	0		
		Acenaphthylene	mg/kg	0.1	0.4	0.5	52	11		
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0		
		Fluorene	mg/kg	0.1	0.1	0.2	100	13		
		Phenanthrene	mg/kg	0.1	2.3	2.5	34	10		
		Anthracene	mg/kg	0.1	0.5	0.6	48	17		
		Fluoranthene	mg/kg	0.1	3.1	3.7	33	18		
		Pyrene	mg/kg	0.1	2.5	3.0	34	16		
		Benzo(a)anthracene	mg/kg	0.1	1.8	2.1	35	16		
		Chrysene	mg/kg	0.1	1.5	1.7	36	17		
		Benzo(b&j)fluoranthene	mg/kg	0.1	1.7	1.9	36	13		
		Benzo(k)fluoranthene	mg/kg	0.1	0.7	0.7	44	10		
		Benzo(a)pyrene	mg/kg	0.1	1.4	1.5	37	12		
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.8	0.9	42	8		
		Dibenzo(ah)anthracene	mg/kg	0.1	0.2	0.2	75	18		
		Benzo(ghi)perylene	mg/kg	0.1	0.7	0.8	43	8		
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	2.1	2.4	19	13		
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	2.1	2.4	19	13		
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	2.1	2.4	23	13		
		Total PAH (18)	mg/kg	0.8	18	20	31	14		
		Surrogates		d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	2
				2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	3
				d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
		SE249506.015	LB283179.026	Naphthalene	mg/kg	0.1	<0.1	0.0556157959	200	0
2-methylnaphthalene	mg/kg			0.1	<0.1	0.0272548041	200	0		
1-methylnaphthalene	mg/kg			0.1	<0.1	0.0379093736	200	0		
Acenaphthylene	mg/kg			0.1	0.3	0.3697958846	59	12		
Acenaphthene	mg/kg			0.1	<0.1	0.0544081276	200	0		
Fluorene	mg/kg			0.1	0.1	0.1403478501	111	29		
Phenanthrene	mg/kg			0.1	1.7	2.4088629296	35	34		
Anthracene	mg/kg			0.1	0.4	0.5196237183	53	34		
Fluoranthene	mg/kg			0.1	3.0	4.1982258486	33	33 @		
Pyrene	mg/kg			0.1	2.6	3.6934575150	33	34 @		
Benzo(a)anthracene	mg/kg			0.1	1.4	1.9917558034	36	32		
Chrysene	mg/kg			0.1	1.3	1.7396744154	37	28		
Benzo(b&j)fluoranthene	mg/kg			0.1	1.5	1.9797965828	36	28		
Benzo(k)fluoranthene	mg/kg			0.1	0.6	0.7460161174	45	21		
Benzo(a)pyrene	mg/kg			0.1	1.3	1.7035967418	37	28		
Indeno(1,2,3-cd)pyrene	mg/kg			0.1	0.8	1.0033858633	41	26		
Dibenzo(ah)anthracene	mg/kg			0.1	0.2	0.2145538063	82	22		
Benzo(ghi)perylene	mg/kg			0.1	0.8	0.9749856749	42	26		
Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg			0.2	1.9	2.5174022368	19	27 @		
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg			0.2	1.9	2.5174022368	19	27 @		
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg			0.3	1.9	2.5174022368	24	27 @		
Total PAH (18)	mg/kg			0.8	16	21.6841752622	31	30		
Surrogates				d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4520533069	30	2
				2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4440083092	30	2
				d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4865961367	30	2
SE249506.029	LB283186.014			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	196	0		
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0		
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0		
		Phenanthrene	mg/kg	0.1	0.5	0.4	52	37		
		Anthracene	mg/kg	0.1	0.1	<0.1	139	6		
		Fluoranthene	mg/kg	0.1	0.6	0.4	50	31		
		Pyrene	mg/kg	0.1	0.5	0.4	51	31		
		Benzo(a)anthracene	mg/kg	0.1	0.2	0.2	76	24		

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 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:  $MAD = 100 \times SDL / Mean + LR$   
 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 identifier 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 give a different calculated RPD.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE249506.029	LB283186.014	Chrysene	mg/kg	0.1	0.2	0.2	79	22	
		Benzo(b&j)fluoranthene	mg/kg	0.1	0.2	0.2	81	20	
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	149	0	
		Benzo(a)pyrene	mg/kg	0.1	0.2	0.2	88	23	
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.1	<0.1	129	11	
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0	
		Benzo(ghi)perylene	mg/kg	0.1	0.1	<0.1	136	4	
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	0.3	<0.2	97	26	
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.3	0.3	81	20	
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	0.4	0.3	100	16	
		Total PAH (18)	mg/kg	0.8	2.9	2.0	34	40 @	
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE249506.038	LB283186.027	Naphthalene	mg/kg	0.1	<0.1	0.0642893839	190	0	
		2-methylnaphthalene	mg/kg	0.1	<0.1	0.0065523911	200	0	
		1-methylnaphthalene	mg/kg	0.1	<0.1	0.0393958863	200	0	
		Acenaphthylene	mg/kg	0.1	0.3	0.2403254098	70	8	
		Acenaphthene	mg/kg	0.1	<0.1	0.0252641303	200	0	
		Fluorene	mg/kg	0.1	<0.1	0.0722567754	169	0	
		Phenanthrene	mg/kg	0.1	1.5	1.4988448626	37	1	
		Anthracene	mg/kg	0.1	0.4	0.3606101746	58	1	
		Fluoranthene	mg/kg	0.1	2.1	2.0171317988	35	2	
		Pyrene	mg/kg	0.1	2.0	1.8466583467	35	7	
		Benzo(a)anthracene	mg/kg	0.1	1.1	0.9968410168	40	10	
		Chrysene	mg/kg	0.1	1.0	0.9169191352	40	8	
		Benzo(b&j)fluoranthene	mg/kg	0.1	1.0	0.9516662409	40	7	
		Benzo(k)fluoranthene	mg/kg	0.1	0.4	0.3863759407	55	4	
		Benzo(a)pyrene	mg/kg	0.1	0.9	0.7921945347	42	8	
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.5	0.4887521342	50	4	
		Dibenzo(ah)anthracene	mg/kg	0.1	0.1	0.1048903954	122	6	
		Benzo(ghi)perylene	mg/kg	0.1	0.5	0.4421832263	52	4	
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	1.3	1.1930394871	26	8	
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	1.3	1.1930394871	26	8	
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	1.3	1.1930394871	34	8	
Total PAH (18)	mg/kg	0.8	12	11.0433932173	31	5			
Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.4515308662	30	5		
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4381910728	30	4		
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4732574708	30	5		

PCBs in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249506.015	LB283179.026	Arochlor 1016	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1221	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1232	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1242	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1248	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1254	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1260	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1262	mg/kg	0.2	<0.2	0	200	0
		Arochlor 1268	mg/kg	0.2	<0.2	0	200	0
		Total PCBs (Arochlors)	mg/kg	1	<1	0	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0.1499516733	30

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 %
SE249506.010	LB283181.014	Arsenic, As	mg/kg	1	6	5	47	14
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	167	0
		Chromium, Cr	mg/kg	0.5	9.2	8.6	36	6
		Copper, Cu	mg/kg	0.5	26	25	32	6
		Nickel, Ni	mg/kg	0.5	7.6	7.0	37	8
		Lead, Pb	mg/kg	1	490	280	30	53 @

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 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:  $MAD = 100 \times SDL / Mean + LR$   
 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 identifier 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 give a different calculated RPD.

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

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249506.010	LB283181.014	Zinc, Zn	mg/kg	2	150	130	31	13
SE249506.019	LB283181.024	Arsenic, As	mg/kg	1	9	8	41	11
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	1.6	1.6	61	2
		Copper, Cu	mg/kg	0.5	22	20	32	9
		Nickel, Ni	mg/kg	0.5	2.3	2.0	53	13
		Lead, Pb	mg/kg	1	6	6	46	2
		Zinc, Zn	mg/kg	2	15	14	44	8
SE249506.029	LB283189.014	Arsenic, As	mg/kg	1	10	11	39	12
		Cadmium, Cd	mg/kg	0.3	0.4	0.6	86	42
		Chromium, Cr	mg/kg	0.5	6.5	6.3	38	4
		Copper, Cu	mg/kg	0.5	12	15	34	26
		Nickel, Ni	mg/kg	0.5	4.6	4.2	41	9
		Lead, Pb	mg/kg	1	49	64	32	27
		Zinc, Zn	mg/kg	2	140	210	31	43 @
SE249506.038	LB283189.024	Arsenic, As	mg/kg	1	9	10	40	10
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	6.9	8.1	37	17
		Copper, Cu	mg/kg	0.5	17	18	33	6
		Nickel, Ni	mg/kg	0.5	6.5	7.1	37	9
		Lead, Pb	mg/kg	1	46	56	32	20
		Zinc, Zn	mg/kg	2	54	63	33	15

Trace Metals (Dissolved) in Water by ICPMS

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249543.026	LB283237.012	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	200	0
		Copper	µg/L	1	<1	<1	200	0
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	<1	<1	200	0
		Zinc	µg/L	5	<5	<5	200	0

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE249506.010	LB283179.014	TRH C10-C14	mg/kg	20	<20	<20	193	0	
		TRH C15-C28	mg/kg	45	160	150	58	7	
		TRH C29-C36	mg/kg	45	71	67	95	7	
		TRH C37-C40	mg/kg	100	<100	<100	200	0	
		TRH C10-C36 Total	mg/kg	110	240	220	78	7	
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	133	0	
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	182	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	210	200	74	5
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE249506.015	LB283179.026	TRH C10-C14	mg/kg	20	<20	<20	200	0	
		TRH C15-C28	mg/kg	45	88	100	77	14	
		TRH C29-C36	mg/kg	45	<45	<45	145	0	
		TRH C37-C40	mg/kg	100	<100	<100	200	0	
		TRH C10-C36 Total	mg/kg	110	<110	<110	146	0	
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	199	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	120	130	102	12
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE249506.029	LB283186.014	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

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 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:  $MAD = 100 \times SDL / Mean + LR$   
 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 identifier 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 give a different calculated RPD.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-ENVJAN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249506.029	LB283186.014	TRH F Bands	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
SE249506.038	LB283186.027		TRH C10-C14	mg/kg	20	<20	4.4816129865	200	0
			TRH C15-C28	mg/kg	45	90	74.3367638135	85	19
			TRH C29-C36	mg/kg	45	<45	14.6275435715	200	0
			TRH C37-C40	mg/kg	100	<100	3.0313189024	200	0
			TRH C10-C36 Total	mg/kg	110	<110	74.3367638135	164	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	0	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	5.6622749310	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	100	35.2241827827	126	13
			TRH >C34-C40 (F4)	mg/kg	120	<120	5.8828830452	200	0

VOC's in Soil

Method: ME-(AU)-ENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249506.010	LB283180.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			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	-	10.3	10.4	50	0
			d8-toluene (Surrogate)	mg/kg	-	8.5	8.6	50	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.0	10.0	50	0
		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
SE249506.019	LB283180.024	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			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	-	11.9	10.7	50	10
			d8-toluene (Surrogate)	mg/kg	-	9.4	8.5	50	11
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.6	9.5	50	11
		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
SE249506.029	LB283187.015	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			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	-	10.1	10.6	50	5
			d8-toluene (Surrogate)	mg/kg	-	10.2	10.9	50	7
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.6	11.1	50	5
		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
SE249506.038	LB283187.031	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	0	200	0
			Toluene	mg/kg	0.1	<0.1	0.0031969484	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	0.0007980657	200	0
			m/p-xylene	mg/kg	0.2	<0.2	0.0083332222	200	0
			o-xylene	mg/kg	0.1	<0.1	0.0010872418	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	0.0083830242	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.3	9.1031531767	50	13
			d8-toluene (Surrogate)	mg/kg	-	10.4	9.1938438659	50	12
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.6	9.1665192840	50	14
		Totals	Total BTEX*	mg/kg	0.6	<0.6	0	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	0.0094204640	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 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:  $MAD = 100 \times SDL / Mean + LR$   
 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 identifier 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 give a different calculated RPD.

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-IENVJAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE249506.010	LB283180.014	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	-	10.3	10.4	50	0
			d8-toluene (Surrogate)	mg/kg	-	8.5	8.6	50	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.0	10.0	50	0
		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
SE249506.019	LB283180.024	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	-	11.9	10.7	50	10
			d8-toluene (Surrogate)	mg/kg	-	9.4	8.5	50	11
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.6	9.5	50	11
		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
SE249506.029	LB283187.015	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	-	10.1	10.6	50	5
			d8-toluene (Surrogate)	mg/kg	-	10.2	10.9	50	7
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.6	11.1	50	5
		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
SE249506.038	LB283187.031	TRH C6-C10	mg/kg	25	<25	0	200	0	
		TRH C6-C9	mg/kg	20	<20	0	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.3	9.1031531767	50	13
			d8-toluene (Surrogate)	mg/kg	-	10.4	9.1938438659	50	12
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.6	9.1665192840	50	14
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	0	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	0	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.

**Mercury in Soil**

Method: ME-(AU)-[ENV]JAN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB283182.002	Mercury	mg/kg	0.05	0.21	0.2	80 - 120	103
LB283247.002	Mercury	mg/kg	0.05	0.23	0.2	80 - 120	113

**OC Pesticides in Soil**

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB283179.002	Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	79
	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	82
	Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	81
	Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	79
	Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	75
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	79
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	89
LB283186.002	Delta BHC	mg/kg	0.1	0.1	0.2	60 - 140	72
	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	76
	Aldrin	mg/kg	0.1	0.1	0.2	60 - 140	74
	Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	75
	Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	71
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	81
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.15	40 - 130	79

**OP Pesticides in Soil**

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB283179.002	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.7	2	60 - 140	85
	Diazinon (Dimpylate)	mg/kg	0.5	1.7	2	60 - 140	85
	Dichlorvos	mg/kg	0.5	1.6	2	60 - 140	78
	Ethion	mg/kg	0.2	1.3	2	60 - 140	65
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130
LB283186.002	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101
	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	89
	Diazinon (Dimpylate)	mg/kg	0.5	1.9	2	60 - 140	93
	Dichlorvos	mg/kg	0.5	1.5	2	60 - 140	76
	Ethion	mg/kg	0.2	1.6	2	60 - 140	81
Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	100

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB283179.002	Naphthalene	mg/kg	0.1	3.4	4	60 - 140	86	
	Acenaphthylene	mg/kg	0.1	3.5	4	60 - 140	88	
	Acenaphthene	mg/kg	0.1	3.8	4	60 - 140	96	
	Phenanthrene	mg/kg	0.1	3.7	4	60 - 140	92	
	Anthracene	mg/kg	0.1	3.6	4	60 - 140	89	
	Fluoranthene	mg/kg	0.1	3.5	4	60 - 140	88	
	Pyrene	mg/kg	0.1	3.7	4	60 - 140	92	
	Benzo(a)pyrene	mg/kg	0.1	3.3	4	60 - 140	82	
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	86
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89
LB283186.002	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101	
	Naphthalene	mg/kg	0.1	3.5	4	60 - 140	87	
	Acenaphthylene	mg/kg	0.1	3.7	4	60 - 140	92	
	Acenaphthene	mg/kg	0.1	3.9	4	60 - 140	97	
	Phenanthrene	mg/kg	0.1	3.7	4	60 - 140	93	
	Anthracene	mg/kg	0.1	3.7	4	60 - 140	93	
	Fluoranthene	mg/kg	0.1	3.6	4	60 - 140	90	
	Pyrene	mg/kg	0.1	4.0	4	60 - 140	100	
	Benzo(a)pyrene	mg/kg	0.1	3.4	4	60 - 140	84	
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	93
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89	
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	100	

**PCBs in Soil**

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR
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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.

PCBs in Soil (continued)

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB283179.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	93
LB283186.002	Arochlor 1260	mg/kg	0.2	0.3	0.4	60 - 140	81

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 %
LB283181.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	104
	Cadmium, Cd	mg/kg	0.3	3.8	4.81	70 - 130	79
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	104
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	106
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	100
	Lead, Pb	mg/kg	1	92	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	280	273	80 - 120	103
LB283189.002	Arsenic, As	mg/kg	1	320	318.22	80 - 120	102
	Cadmium, Cd	mg/kg	0.3	4.1	4.81	70 - 130	85
	Chromium, Cr	mg/kg	0.5	36	38.31	80 - 120	95
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	106
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	100
	Lead, Pb	mg/kg	1	93	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	270	273	80 - 120	100

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB283237.002	Arsenic	µg/L	1	20	20	80 - 120	100
	Cadmium	µg/L	0.1	20	20	80 - 120	102
	Chromium	µg/L	1	20	20	80 - 120	102
	Copper	µg/L	1	21	20	80 - 120	106
	Lead	µg/L	1	21	20	80 - 120	103
	Nickel	µg/L	1	20	20	80 - 120	100
	Zinc	µg/L	5	20	20	80 - 120	101

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB283179.002	TRH C10-C14	mg/kg	20	45	40	60 - 140	114	
	TRH C15-C28	mg/kg	45	45	40	60 - 140	113	
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	82	
	TRH F Bands	TRH >C10-C16	mg/kg	25	47	40	60 - 140	117
	TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	102	
	TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	80	
LB283186.002	TRH C10-C14	mg/kg	20	45	40	60 - 140	112	
	TRH C15-C28	mg/kg	45	<45	40	60 - 140	112	
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	91	
	TRH F Bands	TRH >C10-C16	mg/kg	25	46	40	60 - 140	115
	TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	104	
	TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	90	

VOC's in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB283180.002	Monocyclic	Benzene	mg/kg	0.1	4.6	5	60 - 140	93
		Aromatic	Toluene	mg/kg	0.1	5.3	5	60 - 140
	Ethylbenzene		mg/kg	0.1	4.7	5	60 - 140	94
	m/p-xylene		mg/kg	0.2	9.6	10	60 - 140	96
	o-xylene		mg/kg	0.1	4.8	5	60 - 140	96
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.8	10	70 - 130	118
		d8-toluene (Surrogate)	mg/kg	-	12.0	10	70 - 130	120
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.5	10	70 - 130	105
	LB283187.002	Monocyclic	Benzene	mg/kg	0.1	5.0	5	60 - 140
Aromatic			Toluene	mg/kg	0.1	4.9	5	60 - 140
		Ethylbenzene	mg/kg	0.1	4.8	5	60 - 140	96
		m/p-xylene	mg/kg	0.2	9.7	10	60 - 140	97
		o-xylene	mg/kg	0.1	4.9	5	60 - 140	98
Surrogates		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.1	10	70 - 130	111
	d8-toluene (Surrogate)	mg/kg	-	11.0	10	70 - 130	110	

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.

VOC's in Soil (continued)

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB283187.002	Surrogates Bromofluorobenzene (Surrogate)	mg/kg	-	11.1	10	70 - 130	111

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB283180.002	TRH C6-C10	mg/kg	25	96	92.5	60 - 140	103
	TRH C6-C9	mg/kg	20	84	80	60 - 140	105
	Surrogates d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.8	10	70 - 130	118
	Bromofluorobenzene (Surrogate)	mg/kg	-	10.5	10	70 - 130	105
	VPH F Bands TRH C6-C10 minus BTEX (F1)	mg/kg	25	67	62.5	60 - 140	107
LB283187.002	TRH C6-C10	mg/kg	25	93	92.5	60 - 140	100
	TRH C6-C9	mg/kg	20	81	80	60 - 140	102
	Surrogates d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.1	10	70 - 130	111
	Bromofluorobenzene (Surrogate)	mg/kg	-	11.1	10	70 - 130	111
	VPH F Bands TRH C6-C10 minus BTEX (F1)	mg/kg	25	63	62.5	60 - 140	101



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 identifier 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%
SE249444.001	LB283549.004	Mercury	mg/L	0.0001	0.0019	<0.0001	0.008	94

Mercury in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249506.001	LB283182.004	Mercury	mg/kg	0.05	0.42	0.27	0.2	77
SE249506.020	LB283247.004	Mercury	mg/kg	0.05	0.23	<0.05	0.2	94

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249506.001	LB283179.004	Naphthalene	mg/kg	0.1	3.9	<0.1	4	95
		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	4.3	0.4	4	96
		Acenaphthene	mg/kg	0.1	4.3	0.2	4	102
		Fluorene	mg/kg	0.1	0.1	0.5	-	-
		Phenanthrene	mg/kg	0.1	5.5	6.2	4	-17 ☹
		Anthracene	mg/kg	0.1	4.3	1.1	4	79
		Fluoranthene	mg/kg	0.1	6.5	9.9	4	-83 ☹
		Pyrene	mg/kg	0.1	6.1	8.6	4	-62 ☹
		Benzo(a)anthracene	mg/kg	0.1	1.3	4.0	-	-
		Chrysene	mg/kg	0.1	1.2	3.3	-	-
		Benzo(b&j)fluoranthene	mg/kg	0.1	1.4	3.9	-	-
		Benzo(k)fluoranthene	mg/kg	0.1	0.6	1.6	-	-
		Benzo(a)pyrene	mg/kg	0.1	4.9	3.6	4	32 ☹
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.7	2.2	-	-
		Dibenzo(ah)anthracene	mg/kg	0.1	0.2	0.4	-	-
		Benzo(ghi)perylene	mg/kg	0.1	0.7	2.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	5.4	5.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	5.4	5.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	5.4	5.2	-	-
Total PAH (18)	mg/kg	0.8	46	48	-	-		
Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	-	87	
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	87	
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	96	
SE249506.020	LB283186.004	Naphthalene	mg/kg	0.1	4.2	<0.1	4	105
		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	4.4	<0.1	4	111
		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	4.8	0.2	4	115
		Anthracene	mg/kg	0.1	4.5	<0.1	4	112
		Fluoranthene	mg/kg	0.1	4.7	0.4	4	109
		Pyrene	mg/kg	0.1	5.1	0.3	4	119
		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	4.1	0.1	4	101
		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	4.2	<0.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.2	<0.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.3	<0.3	-	-
Total PAH (18)	mg/kg	0.8	37	1.3	-	-		
Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	95	
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	-	90	

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]JAN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249506.020	LB283186.004	Surrogates d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	100

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

Method: ME-(AU)-[ENV]JAN40/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249506.001	LB283181.004	Arsenic, As	mg/kg	1	53	7	50	91
		Cadmium, Cd	mg/kg	0.3	45	0.4	50	88
		Chromium, Cr	mg/kg	0.5	66	30	50	72
		Copper, Cu	mg/kg	0.5	82	32	50	99
		Nickel, Ni	mg/kg	0.5	57	15	50	84
		Lead, Pb	mg/kg	1	370	240	50	249 ⊕
		Zinc, Zn	mg/kg	2	250	240	50	19 ⊕
SE249506.020	LB283189.004	Arsenic, As	mg/kg	1	51	8	50	85
		Cadmium, Cd	mg/kg	0.3	41	<0.3	50	82
		Chromium, Cr	mg/kg	0.5	51	4.4	50	93
		Copper, Cu	mg/kg	0.5	61	14	50	94
		Nickel, Ni	mg/kg	0.5	47	2.0	50	90
		Lead, Pb	mg/kg	1	80	46	50	67 ⊕
		Zinc, Zn	mg/kg	2	74	43	50	62 ⊕

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]JAN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249470.037	LB283237.004	Arsenic	µg/L	1	19	ERROR	20	96
		Cadmium	µg/L	0.1	20	ERROR	20	100
		Chromium	µg/L	1	20	ERROR	20	99
		Copper	µg/L	1	21	ERROR	20	100
		Lead	µg/L	1	20	ERROR	20	101
		Nickel	µg/L	1	19	ERROR	20	96
		Zinc	µg/L	5	20	ERROR	20	93

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]JAN403

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249506.001	LB283179.004	TRH C10-C14	mg/kg	20	51	<20	40	114
		TRH C15-C28	mg/kg	45	100	110	40	-33 ⊕
		TRH C29-C36	mg/kg	45	63	<45	40	68
		TRH C37-C40	mg/kg	100	<100	<100	-	-
		TRH C10-C36 Total	mg/kg	110	210	110	-	-
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F Bands >C10-C16	mg/kg	25	53	<25	40	115
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	53	<25	-	-
		TRH >C16-C34 (F3)	mg/kg	90	120	140	40	-64 ⊕
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-
SE249506.020	LB283186.004	TRH C10-C14	mg/kg	20	49	<20	40	116
		TRH C15-C28	mg/kg	45	53	<45	40	99
		TRH C29-C36	mg/kg	45	<45	<45	40	82
		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 Bands >C10-C16	mg/kg	25	51	<25	40	120
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	49	<25	-	-
		TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	77
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]JAN433

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE249506.001	LB283180.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.4	<0.1	5	88
			Toluene	mg/kg	0.1	5.1	<0.1	5	101
			Ethylbenzene	mg/kg	0.1	4.6	<0.1	5	92
			m/p-xylene	mg/kg	0.2	9.6	<0.2	10	96
			o-xylene	mg/kg	0.1	4.8	<0.1	5	96
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
			Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.0	11.3	10
		d8-toluene (Surrogate)		mg/kg	-	10.5	9.5	10	105
		Bromofluorobenzene (Surrogate)		mg/kg	-	9.5	11.8	10	95

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%		
SE249506.001	LB283180.004	Totals	Total BTEX*	mg/kg	0.6	29	<0.6	-	-	
			Total Xylenes*	mg/kg	0.3	14	<0.3	-	-	
SE249506.020	LB283187.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	6.0	<0.1	5	120	
			Toluene	mg/kg	0.1	5.9	<0.1	5	118	
			Ethylbenzene	mg/kg	0.1	5.8	<0.1	5	115	
			m/p-xylene	mg/kg	0.2	12	<0.2	10	116	
			o-xylene	mg/kg	0.1	5.9	<0.1	5	117	
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-	-
			Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.2	9.9	10	102
		d8-toluene (Surrogate)		mg/kg	-	9.9	9.9	10	99	
		Bromofluorobenzene (Surrogate)		mg/kg	-	10.1	10.8	10	101	
		Totals	Total BTEX*	mg/kg	0.6	35	<0.6	-	-	-
Total Xylenes*	mg/kg		0.3	18	<0.3	-	-	-		

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE249506.001	LB283180.004	Surrogates	TRH C6-C10	mg/kg	25	100	<25	92.5	110
			TRH C6-C9	mg/kg	20	90	<20	80	112
		VPH F	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.0	11.3	10	100
			d8-toluene (Surrogate)	mg/kg	-	10.5	9.5	10	105
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.5	11.8	-	95
		SE249506.020	LB283187.004	Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	74	<25
TRH C6-C10	mg/kg				25	110	<25	92.5	120
Surrogates	TRH C6-C9			mg/kg	20	98	<20	80	123
	d4-1,2-dichloroethane (Surrogate)			mg/kg	-	10.2	9.9	10	102
	d8-toluene (Surrogate)			mg/kg	-	9.9	9.9	10	99
VPH F	Bromofluorobenzene (Surrogate)			mg/kg	-	10.1	10.8	-	101
	Benzene (F0)	mg/kg	0.1	6.0	<0.1	-	-		
Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	76	<25	62.5	121		

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

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:  $MAD = 100 \times SDL / Mean + LR$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

QC Sample	Sample Number	Parameter	Units	LOR
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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](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.

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CLIENT DETAILS

LABORATORY DETAILS

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Project **E0076 (GaoI)**  
 Order Number **HEC0178**  
 Samples **1**

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SGS Reference **ME334967 R0**  
 Date Received **23 Jun 2023**  
 Date Reported **30 Jun 2023**

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562 (14420/22793/24472).

SIGNATORIES



Ryan ZHANG  
 Inorganics Team Leader



Susan WAN  
 Senior Chemist



Vanessa PALAMARA  
 Senior Chemist

Sample Number	ME334967.001	
Sample Matrix	Soil	
Sample Date	19 Jun 2023	
Sample Name	TRIP 1	
Parameter	Units	LOR

**Moisture Content Method: AN002 Tested: 27/6/2023**

% Moisture	%w/w	1	<b>16.0</b>
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**USEPA 8260B Volatile Organic Compounds in Solids/Soils Method: USEPA 8260 B Tested: 27/6/2023**

m&p-Xylenes	mg/kg	0.1	<0.1
Total BTEX	mg/kg	0.5	<0.5

Monocyclic Aromatic Hydrocarbons

Benzene	mg/kg	0.1	<0.1
Toluene	mg/kg	0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1
o-Xylenes	mg/kg	0.1	<0.1

Polycyclic Aromatic Hydrocarbons

Naphthalene (VOC)	mg/kg	0.1	<0.1
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Surrogates

Toluene-d8 (surrogate)	%	-	<b>66</b>
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**Volatile Petroleum Hydrocarbons in soil Method: MA30-VPH Tested: 27/6/2023**

TRH C6-C9 (P&T)	mg/kg	10	<10
TRH C6-C10 (P&T)	mg/kg	10	<10
TRH C6-C10 (P&T) less BTEX (F1)	mg/kg	10	<10

Sample Number	ME334967.001	
Sample Matrix	Soil	
Sample Date	19 Jun 2023	
Sample Name	TRIP 1	
Parameter	Units	LOR

TRH in soil MA-30.SL.01 Method: MA30 Tested: 27/6/2023

TRH C6-C9 (P&T)	mg/kg	10	<10
TRH C10-C14	mg/kg	10	<b>10</b>
TRH >C10-C16	mg/kg	10	<b>24</b>
TRH>C10-C16 less naphthalene (F2)	mg/kg	10	<b>24</b>
TRH >C16-C34 (F3)	mg/kg	20	<b>310</b>
TRH C15-C28	mg/kg	20	<b>250</b>
TRH C29-C36	mg/kg	20	<b>93</b>
C6-C10 (P&T) less BTEX (F1)	mg/kg	10	<10
Total TRH C10-C36	mg/kg	20	<b>360</b>
TRH >C34-C40 (F4)	mg/kg	20	<b>53</b>
TRH C6-C10 (P&T)	mg/kg	10	<10
Total TRH C6-C36	mg/kg	20	<b>360</b>
Total TRH C6-C40 (F)	mg/kg	20	<b>390</b>
TRH >C10-C40 (F)	mg/kg	20	<b>390</b>

8270D.SL.01 SVOCs All in Solids/Soils Method: MA 8270 Tested: 26/6/2023

1-Methylnaphthalene	mg/kg	0.1	<b>0.2</b>
2-Methylnaphthalene	mg/kg	0.1	<b>0.2</b>
Acenaphthene	mg/kg	0.1	<b>0.1</b>
Acenaphthylene	mg/kg	0.1	<b>0.8</b>
Anthracene	mg/kg	0.1	<b>1.7</b>
Benzo(a)anthracene	mg/kg	0.1	<b>3.1</b>
Benzo (a) pyrene	mg/kg	0.1	<b>2.1</b>
Benzo (b+j) fluoranthene	mg/kg	0.1	<b>2.6</b>
Benzo (ghi) perylene	mg/kg	0.1	<b>0.3</b>
Benzo (k) fluoranthene	mg/kg	0.1	<b>1.5</b>
Chrysene	mg/kg	0.1	<b>3.2</b>
Dibenz (ah) anthracene	mg/kg	0.1	<b>0.3</b>
Fluoranthene	mg/kg	0.1	<b>7.0</b>
Fluorene	mg/kg	0.1	<b>0.4</b>
Indeno (1,2,3-cd) pyrene	mg/kg	0.1	<b>0.3</b>
Naphthalene	mg/kg	0.1	<b>0.1</b>
Phenanthrene	mg/kg	0.5	<b>6.3</b>
Pyrene	mg/kg	0.5	<b>5.7</b>
2,4,6-Tribromophenol (surrogate)	%	-	<b>98</b>
Fluorobiphenyl (surrogate)	%	-	<b>82</b>
Fluorophenol (surrogate)	%	-	<b>104</b>
Nitrobenzene-D5 (surrogate)	%	-	<b>98</b>
p-Terphenyl-D14 (surrogate)	%	-	<b>90</b>
Phenol-D6 (surrogate)	%	-	<b>88</b>



Sample Number ME334967.001  
 Sample Matrix Soil  
 Sample Date 19 Jun 2023  
 Sample Name TRIP 1

Parameter Units LOR

Metals/Elements in Solids Method: MA1400\_1 Tested: 27/6/2023

Arsenic	mg/kg	2	<b>8</b>
Cadmium	mg/kg	0.2	<b>0.4</b>
Chromium	mg/kg	2	<b>30</b>
Copper	mg/kg	2	<b>33</b>
Lead	mg/kg	2	<b>190</b>
Mercury	mg/kg	0.05	<b>0.37</b>
Nickel	mg/kg	2	<b>20</b>
Zinc	mg/kg	2	<b>180</b>

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

8270D.SL.01 SVOCs All in Solids/Soils Method: MA 8270

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
1-Methylnaphthalene	LB063241	mg/kg	0.1	<0.1	NA
2-Methylnaphthalene	LB063241	mg/kg	0.1	<0.1	NA
Acenaphthene	LB063241	mg/kg	0.1	<0.1	92%
Acenaphthylene	LB063241	mg/kg	0.1	<0.1	NA
Anthracene	LB063241	mg/kg	0.1	<0.1	NA
Benzo(a)anthracene	LB063241	mg/kg	0.1	<0.1	NA
Benzo (a) pyrene	LB063241	mg/kg	0.1	<0.1	NA
Benzo (b+j) fluoranthene	LB063241	mg/kg	0.1	<0.1	NA
Benzo (ghi) perylene	LB063241	mg/kg	0.1	<0.1	NA
Benzo (k) fluoranthene	LB063241	mg/kg	0.1	<0.1	NA
Chrysene	LB063241	mg/kg	0.1	<0.1	NA
Dibenz (ah) anthracene	LB063241	mg/kg	0.1	<0.1	NA
Fluoranthene	LB063241	mg/kg	0.1	<0.1	NA
Fluorene	LB063241	mg/kg	0.1	<0.1	NA
Indeno (1,2,3-cd) pyrene	LB063241	mg/kg	0.1	<0.1	NA
Naphthalene	LB063241	mg/kg	0.1	<0.1	NA
Phenanthrene	LB063241	mg/kg	0.5	<0.5	NA
Pyrene	LB063241	mg/kg	0.5	<0.5	91%
2,4,6-Tribromophenol (surrogate)	LB063241	%	-	85%	102%
Fluorobiphenyl (surrogate)	LB063241	%	-	67%	94%
Fluorophenol (surrogate)	LB063241	%	-	112%	109%
Nitrobenzene-D5 (surrogate)	LB063241	%	-	103%	102%
p-Terphenyl-D14 (surrogate)	LB063241	%	-	85%	91%
Phenol-D6 (surrogate)	LB063241	%	-	94%	61%

Metals/Elements in Solids Method: MA1400\_1

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Arsenic	LB063316	mg/kg	2	<2	17%	101%
Cadmium	LB063316	mg/kg	0.2	<0.2	0%	101%
Chromium	LB063316	mg/kg	2	<2	32%	100%
Copper	LB063316	mg/kg	2	<2	0%	97%
Lead	LB063316	mg/kg	2	<2	23%	104%
Mercury	LB063316	mg/kg	0.05	<0.05	0%	101%
Nickel	LB063316	mg/kg	2	<2	39%	98%
Zinc	LB063316	mg/kg	2	<2	32%	95%

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

TRH in soil MA-30.SL.01 Method: MA30

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH C6-C9 (P&T)	LB063298	mg/kg	10	<10	NA
TRH C10-C14	LB063298	mg/kg	10	<10	NA
TRH >C10-C16	LB063298	mg/kg	10	<10	NA
TRH>C10-C16 less naphthalene (F2)	LB063298	mg/kg	10	<10	NA
TRH >C16-C34 (F3)	LB063298	mg/kg	20	<20	NA
TRH C15-C28	LB063298	mg/kg	20	<20	NA
TRH C29-C36	LB063298	mg/kg	20	<20	NA
C6-C10 (P&T) less BTEX (F1)	LB063298	mg/kg	10	<10	NA
Total TRH C10-C36	LB063298	mg/kg	20	<20	106%
TRH >C34-C40 (F4)	LB063298	mg/kg	20	<20	NA
TRH C6-C10 (P&T)	LB063298	mg/kg	10	<10	NA
Total TRH C6-C36	LB063298	mg/kg	20	<20	NA
Total TRH C6-C40 (F)	LB063298	mg/kg	20	<20	NA
TRH >C10-C40 (F)	LB063298	mg/kg	20	<20	NA

USEPA 8260B Volatile Organic Compounds in Solids/Soils Method: USEPA 8260 B

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
m&p-Xylenes	LB063296	mg/kg	0.1	<0.1	0%	NA	NA	NA
Total BTEX	LB063296	mg/kg	0.5	<0.5	0%	NA	NA	NA

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
Benzene	LB063296	mg/kg	0.1	<0.1	0%	100%	104%	2%
Toluene	LB063296	mg/kg	0.1	<0.1	0%	109%	114%	3%
Ethylbenzene	LB063296	mg/kg	0.1	<0.1	0%	105%	109%	4%
o-Xylenes	LB063296	mg/kg	0.1	<0.1	0%	NA		

Polycyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
Naphthalene (VOC)	LB063296	mg/kg	0.1	<0.1	0%	NA	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
Toluene-d8 (surrogate)	LB063296	%	-	64%	1 - 3%	69%	73%	0%

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

**Volatile Petroleum Hydrocarbons in soil Method: MA30-VPH**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
TRH C6-C9 (P&T)	LB063296	mg/kg	10	<10	0%	105%
TRH C6-C10 (P&T)	LB063296	mg/kg	10	<10	0%	86%
TRH C6-C10 (P&T) less BTEX (F1)	LB063296	mg/kg	10	<10	0%	NA

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.

MA 8270

This method covers analytical procedures for the analysis of semi-volatile organic compounds (SVOC) including most neutral, acidic, and basic organic compounds based on the USEPA method 8270D. Samples are extracted into a solvent appropriate to the matrix and analysed using a gas chromatograph – mass spectrometer (GC–MS) Total PAH calculated from individual analyte detections at or above the limit of reporting .

MA1400\_1

A weighed portion of as received sample is extracted in concentrated acid using microwave heating by the Microwave Digestion system. The sample and acid are placed in a microwave vessel (TFM), which is then capped and heated in the microwave unit. After cooling, the vessel contents are diluted with DI water, then filtered, centrifuged, or allowed to settle and analysed by ICP-MS.

MA-30

This method is used for the analysis of Total Recoverable Hydrocarbons (TRH). TRH is a generic term for all extractable organic compounds and includes all hydrocarbons and hydrocarbon derivatives that have between six and forty carbons per molecule i.e. compounds in the range >C5 to C40.

The reporting of Total Recoverable Hydrocarbons is done by grouping compounds of similar nature and behaviour into "fractions".

Samples are extracted into a solvent appropriate to the matrix. The extract is then analysed using a gas chromatograph with either a flame ionisation detector (GC-FID) or a mass spectrometer (GC-MS)

MA30 -VPH

This method is used to quantify Volatile Petroleum Hydrocarbon (VPH) fractions using Gas Chromatography Mass Spectrometry coupled with a purge and trap sample concentrator. This method is based on USEPA 8260B (Volatile Organic Compounds by Gas Chromatography Mass Spectrometry GC/MS), using USEPA 5035 (Closed system purge and trap and extraction for volatile organics in soil and solid waste samples.).

MA30-VPH

A sample is weighed out, and has surrogates added and is extracted in methanol. This methanol extract is then diluted in water. A stream of helium is passed through a portion of the extracted sample ; the volatile components are 'purged' from the sample and are collected and concentrated on an adsorbent trap. The trap is rapidly heated and back-flushed with helium to 'desorb' the analytes onto the Gas Chromatographic column. The GC column separates the analytes and they are passed into the Mass Selective detector, which fragments the molecules and produces "mass spectra" of each compound.

MA8270

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.

USEPA 8260B

This method is used to quantify Volatile Organic Compounds using Gas Chromatography Mass Spectrometry coupled with a purge and trap sample concentrator. This method is based on USEPA 8260B (Volatile Organic Compounds by Gas Chromatography Mass Spectrometry GC/MS), using USEPA 5035 (Closed system purge and trap and extraction for volatile organics in soil and solid waste samples.).

USEPA 8260B

A sample is weighed out, and has surrogates added and is extracted in methanol. This methanol extract is then diluted in water. A stream of helium is passed through a portion of the extracted sample ; the volatile components are 'purged' from the sample and are collected and concentrated on an adsorbent trap. The trap is rapidly heated and back-flushed with helium to 'desorb' the analytes onto the Gas Chromatographic column. The GC column separates the analytes and they are passed into the Mass Selective detector, which fragments the molecules and produces "mass spectra" of each compound.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
**	Indicative data, theoretical holding time exceeded.	QFL	QC result is below the lower tolerance
***	Indicates that both * and ** apply.	-	The sample was not analysed for this analyte
		NVL	Not Validated

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](http://www.sgs.com.au/en-gb/environment-health-and-safety).

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### CLIENT DETAILS

Contact	Result
Client	HUNTER ENVIRONMENTAL CONSULTING PTY LTD
Address	PO BOX 3127 THORNTON NSW 2322
Telephone	61 2 49661844
Facsimile	(Not specified)
Email	Results@hunterenviro.com.au
Project	<b>E0076 (Gaal)</b>
Order Number	<b>HEC0178</b>
Samples	1

### LABORATORY DETAILS

Manager	Adam Atkinson
Laboratory	SGS Melbourne EH&S
Address	10/585 Blackburn Road Notting Hill Victoria 3168
Telephone	+61395743200
Facsimile	+61395743399
Email	Au.SampleReceipt.Melbourne@sgs.com
SGS Reference	<b>ME334967 R0</b>
Date Received	23 Jun 2023
Date Reported	30 Jun 2023

### 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 (within the SGS Melbourne EH&S laboratory).

### SAMPLE SUMMARY

Sample counts by matrix	1 Soil	Type of documentation received	COC
Date documentation received	23/6/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	19.5°C
Sample container provider	SGS	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	Number of eskies/boxes received	1

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

### 8270D.SL.01 SVOCs All in Solids/Soils

Method: MA 8270

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TRIP 1	ME334967.001	LB063241	19 Jun 2023	23 Jun 2023	03 Jul 2023	26 Jun 2023	05 Aug 2023	28 Jun 2023

### Metals/Elements in Solids

Method: MA1400\_1

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TRIP 1	ME334967.001	LB063316	19 Jun 2023	23 Jun 2023	16 Dec 2023	27 Jun 2023	16 Dec 2023	30 Jun 2023

### Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TRIP 1	ME334967.001	LB063297	19 Jun 2023	23 Jun 2023	03 Jul 2023	27 Jun 2023	02 Jul 2023	28 Jun 2023

### TRH in soil MA-30.SL.01

Method: MA30

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TRIP 1	ME334967.001	LB063298	19 Jun 2023	23 Jun 2023	03 Jul 2023	27 Jun 2023	06 Aug 2023	29 Jun 2023

### USEPA 8260B Volatile Organic Compounds in Solids/Soils

Method: USEPA 8260 B

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TRIP 1	ME334967.001	LB063296	19 Jun 2023	23 Jun 2023	03 Jul 2023	27 Jun 2023	03 Jul 2023	28 Jun 2023

### Volatile Petroleum Hydrocarbons in soil

Method: MA30-VPH

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TRIP 1	ME334967.001	LB063296	19 Jun 2023	23 Jun 2023	03 Jul 2023	27 Jun 2023	03 Jul 2023	28 Jun 2023



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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

8270D.SL.01 SVOCs All in Solids/Soils

Method: MA 8270

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2,4,6-Tribromophenol (surrogate)	TRIP 1	ME334967.001	%	60 - 140%	98
Fluorobiphenyl (surrogate)	TRIP 1	ME334967.001	%	60 - 140%	82
Fluorophenol (surrogate)	TRIP 1	ME334967.001	%	60 - 140%	104
Nitrobenzene-D5 (surrogate)	TRIP 1	ME334967.001	%	60 - 140%	98
Phenol-D6 (surrogate)	TRIP 1	ME334967.001	%	60 - 140%	88
p-Terphenyl-D14 (surrogate)	TRIP 1	ME334967.001	%	60 - 140%	90

USEPA 8260B Volatile Organic Compounds in Solids/Soils

Method: USEPA 8260 B

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Toluene-d8 (surrogate)	TRIP 1	ME334967.001	%	60 - 130%	66

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.

8270D.SL.01 SVOCs All in Solids/Soils

Method: MA 8270

Sample Number	Parameter	Units	LOR	Result
LB063241.001	1-Methylnaphthalene	mg/kg	0.1	<0.1
	2-Methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Benzo (a) pyrene	mg/kg	0.1	<0.1
	Benzo (b+) fluoranthene	mg/kg	0.1	<0.1
	Benzo (ghi) perylene	mg/kg	0.1	<0.1
	Benzo (k) fluoranthene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Dibenz (ah) anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Indeno (1,2,3-cd) pyrene	mg/kg	0.1	<0.1
	Naphthalene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.5	<0.5
	Pyrene	mg/kg	0.5	<0.5

Metals/Elements in Solids

Method: MA1400\_1

Sample Number	Parameter	Units	LOR	Result
LB063316.001	Arsenic	mg/kg	2	<2
	Cadmium	mg/kg	0.2	<0.2
	Chromium	mg/kg	2	<2
	Copper	mg/kg	2	<2
	Lead	mg/kg	2	<2
	Mercury	mg/kg	0.05	<0.05
	Nickel	mg/kg	2	<2
	Zinc	mg/kg	2	<2

TRH in soil MA-30.SL.01

Method: MA30

Sample Number	Parameter	Units	LOR	Result
LB063298.001	TRH C6-C9 (P&T)	mg/kg	10	<10
	TRH C10-C14	mg/kg	10	<10
	TRH >C10-C16	mg/kg	10	<10
	TRH>C10-C16 less naphthalene (F2)	mg/kg	10	<10
	TRH >C16-C34 (F3)	mg/kg	20	<20
	TRH C15-C28	mg/kg	20	<20
	TRH C29-C36	mg/kg	20	<20
	C6-C10 (P&T) less BTEX (F1)	mg/kg	10	<10
	Total TRH C10-C36	mg/kg	20	<20
	TRH >C34-C40 (F4)	mg/kg	20	<20
	TRH C6-C10 (P&T)	mg/kg	10	<10
	Total TRH C6-C36	mg/kg	20	<20
	Total TRH C6-C40 (F)	mg/kg	20	<20
	TRH >C10-C40 (F)	mg/kg	20	<20

USEPA 8260B Volatile Organic Compounds in Solids/Soils

Method: USEPA 8260 B

Sample Number	Parameter	Units	LOR	Result	
LB063296.001	Monocyclic Aromatic Hydrocarbons	m&p-Xylenes	mg/kg	0.1	<0.1
		Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
	Polycyclic Aromatic	o-Xylenes	mg/kg	0.1	<0.1
		Naphthalene (VOC)	mg/kg	0.1	<0.1
	Surrogates	Toluene-d8 (surrogate)	%	-	64

Volatile Petroleum Hydrocarbons in soil

Method: MA30-VPH

Sample Number	Parameter	Units	LOR	Result
LB063296.001	TRH C6-C9 (P&T)	mg/kg	10	<10
	TRH C6-C10 (P&T)	mg/kg	10	<10
	TRH C6-C10 (P&T) less BTEX (F1)	mg/kg	10	<10

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

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:  $MAD = 100 \times SDL / Mean + LR$

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 identifier 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

Metals/Elements in Solids

Method: MA1400\_1

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
ME334994.007	LB063316.017	Arsenic	mg/kg	2	4.18279483313	5.300246027	82	17
		Cadmium	mg/kg	0.2	0	0	200	0
		Chromium	mg/kg	2	9.37227706696	7.573413966	55	32
		Copper	mg/kg	2	1.00595791150	0.9271485554	200	0
		Lead	mg/kg	2	6.24104480884	9.991266435	66	23
		Mercury	mg/kg	0.05	0.00948442100	0.062475715	200	0
		Nickel	mg/kg	2	3.05833306642	0.591210849	108	39
		Zinc	mg/kg	2	3.87660692862	7.971689651	90	32

USEPA 8260B Volatile Organic Compounds in Solids/Soils

Method: USEPA 8260 B

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
ME334841A.005	LB063296.004	m&p-Xylenes	mg/kg	0.1	<0.1	<0.1	200	0
		Monocyclic Aromatic						
		Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Toluene	mg/kg	0.1	<0.1	<0.1	200	0
		Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic						
		Naphthalene (VOC)	mg/kg	0.1	<0.1	<0.1	200	0
ME334989.002	LB063296.017	Surrogates						
		Toluene-d8 (surrogate)	mg/kg	-	14	15	30	3
		m&p-Xylenes	mg/kg	0.1	<0.1	<0.1	200	0
		Total BTEX	mg/kg	0.5	<0.5	<0.5	200	0
		Monocyclic Aromatic						
		Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Toluene	mg/kg	0.1	<0.1	<0.1	200	0
		Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
		o-Xylenes	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic						
		Naphthalene (VOC)	mg/kg	0.1	<0.1	<0.1	200	0
Surrogates								
		Toluene-d8 (surrogate)	mg/kg	-	14	13	30	1

Volatile Petroleum Hydrocarbons in soil

Method: MA30-VPH

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
ME334989.002	LB063296.017	TRH C6-C9 (P&T)	mg/kg	10	<20	<20	200	0
		TRH C6-C10 (P&T)	mg/kg	10	0	0	200	0
		TRH C6-C10 (P&T) less BTEX (F1)	mg/kg	10	0	0	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.

8270D.SL.01 SVOCs All in Solids/Soils

Method: MA 8270

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB063241.002	Acenaphthene	mg/kg	0.1	2.3	2.5	60 - 140	92
	Pyrene	mg/kg	0.5	2.3	2.5	60 - 140	91
	2,4,6-Tribromophenol (surrogate)	mg/kg	-	1	1	60 - 140	102
	Fluorobiphenyl (surrogate)	mg/kg	-	1	1	60 - 140	94
	Fluorophenol (surrogate)	mg/kg	-	1	1	60 - 140	109
	Nitrobenzene-D5 (surrogate)	mg/kg	-	1	1	60 - 140	102
	p-Terphenyl-D14 (surrogate)	mg/kg	-	1	1	60 - 140	91
	Phenol-D6 (surrogate)	mg/kg	-	1	1	60 - 140	61

Metals/Elements In Solids

Method: MA1400\_1

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB063316.002	Arsenic	mg/kg	2	10	10	80 - 120	101
	Cadmium	mg/kg	0.2	10	10	80 - 120	101
	Chromium	mg/kg	2	10	10	80 - 120	100
	Copper	mg/kg	2	10	10	80 - 120	97
	Lead	mg/kg	2	10	10	80 - 120	104
	Mercury	mg/kg	0.05	1.0	1	80 - 120	101
	Nickel	mg/kg	2	10	10	80 - 120	98
	Zinc	mg/kg	2	10	10	80 - 120	95

TRH in soil MA-30.SL.01

Method: MA30

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB063298.002	Total TRH C10-C36	mg/kg	20	530	500	60 - 140	106

USEPA 8260B Volatile Organic Compounds in Solids/Soils

Method: USEPA 8260 B

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB063296.002	Monocyclic Benzene	mg/kg	0.1	5.0	5	60 - 140	100
	Aromatic Toluene	mg/kg	0.1	5.5	5	60 - 140	109
	Ethylbenzene	mg/kg	0.1	5.2	5	60 - 140	105

Volatile Petroleum Hydrocarbons in soil

Method: MA30-VPH

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB063296.002	TRH C6-C9 (P&T)	mg/kg	10	31	30	60 - 140	105
	TRH C6-C10 (P&T)	mg/kg	10	30	35	60 - 140	86

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

USEPA 8260B Volatile Organic Compounds in Solids/Soils

Method: USEPA 8260 B

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
ME334841A.00	LB063296.005	m&p-Xylenes	mg/kg	0.1	<0.1	<0.1	-	-
5		Total BTEX	mg/kg	0.5	16	-	-	-
		Monocyclic Benzene	mg/kg	0.1	5.2	<0.1	5	104
		Aromatic Toluene	mg/kg	0.1	5.7	<0.1	5	114
		Ethylbenzene	mg/kg	0.1	5.5	<0.1	5	109
		Polycyclic Naphthalene (VOC)	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates Toluene-d8 (surrogate)	µg/L	-	15	14	-	73

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

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:  $MAD = 100 \times SDL / Mean + LR$

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 identifier when outside suggested criteria. Refer to the footnotes section at the

USEPA 8260B Volatile Organic Compounds in Solids/Soils

Method: USEPA 8260 B

QC Sample	Sample Number	Parameter	Units	LOR	Duplicate
ME334841A.00	LB063296.006	m&p-Xylenes	mg/kg	0.1	<0.1
5		Total BTEX	mg/kg	0.5	17
	Monocyclic	Benzene	mg/kg	0.1	5.3
	Aromatic	Toluene	mg/kg	0.1	5.9
		Ethylbenzene	mg/kg	0.1	5.7
	Polycyclic	Naphthalene (VOC)	mg/kg	0.1	<0.1
	Surrogates	Toluene-d8 (surrogate)	µg/L	-	15

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](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 Majority of surrogate recoveries 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).
- ⑪ Majority of spike recoveries are within acceptance criteria.
- † Refer to relevant report comments for further information.

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Project **E0076(Gaol)**  
 Order Number **HEC0183**  
 Samples **2**

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SGS Reference **SE249903 R0**  
 Date Received **28/6/2023**  
 Date Reported **5/7/2023**

COMMENTS

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

SIGNATORIES



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 Chemist



**Dong LIANG**  
 Metals/Inorganics Team Leader



**Ly Kim HA**  
 Organic Section Head



VOCs in Water [AN433] Tested: 30/6/2023

PARAMETER	UOM	LOR	MW3	DUP_W
			WATER - 27/6/2023 SE249903.001	WATER - 27/6/2023 SE249903.002
Benzene	µg/L	0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5
m/p-xylene	µg/L	1	<1	<1
o-xylene	µg/L	0.5	<0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5	<1.5
Total BTEX	µg/L	3	<3	<3
Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 30/6/2023

PARAMETER	UOM	LOR	MW3	DUP_W
			WATER - 27/6/2023 SE249903.001	WATER - 27/6/2023 SE249903.002
TRH C6-C9	µg/L	40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 28/6/2023

PARAMETER	UOM	LOR	MW3	DUP_W
			WATER - 27/6/2023 SE249903.001	WATER - 27/6/2023 SE249903.002
TRH C10-C14	µg/L	50	<50	<50
TRH C15-C28	µg/L	200	<200	<200
TRH C29-C36	µg/L	200	<200	<200
TRH C37-C40	µg/L	200	<200	<200
TRH >C10-C16	µg/L	60	<60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60
TRH >C16-C34 (F3)	µg/L	500	<500	<500
TRH >C34-C40 (F4)	µg/L	500	<500	<500
TRH C10-C40	µg/L	320	<320	<320

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 28/6/2023

PARAMETER	UOM	LOR	MW3	DUP_W
			WATER - 27/6/2023 SE249903.001	WATER - 27/6/2023 SE249903.002
Naphthalene	µg/L	0.1	<0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	<0.1
Fluorene	µg/L	0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	<0.1
Anthracene	µg/L	0.1	<0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1	<0.1
Pyrene	µg/L	0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1
Total PAH (18)	µg/L	1	<1	<1

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 29/6/2023

PARAMETER	UOM	LOR	MW3	DUP_W
			WATER - 27/6/2023 SE249903.001	WATER - 27/6/2023 SE249903.002
Arsenic	µg/L	1	<b>11</b>	<b>13</b>
Cadmium	µg/L	0.1	<0.1	<0.1
Chromium	µg/L	1	<1	<1
Copper	µg/L	1	<1	<b>1</b>
Lead	µg/L	1	<1	<b>1</b>
Nickel	µg/L	1	<b>4</b>	<b>4</b>
Zinc	µg/L	5	<b>7</b>	<b>9</b>

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 3/7/2023

PARAMETER	UOM	LOR	MW3	DUP_W
			WATER - 27/6/2023 SE249903.001	WATER - 27/6/2023 SE249903.002
Mercury	mg/L	0.0001	<0.0001	<0.0001

METHOD

METHODOLOGY SUMMARY

- AN020** Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
- 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.
- 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). Where F2 is corrected for Naphthalene, the VOC data for Naphthalene is used.
- AN403** Additionally, the volatile C6-C9/C6-C10 fractions may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Silica) 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 .
- 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.

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](http://www.sgs.com.au/en-gb/environment-health-and-safety).

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Project	<b>E0076(Gaol)</b>	SGS Reference	<b>SE249903 R0</b>
Order Number	<b>HEC0183</b>	Date Received	28 Jun 2023
Samples	2	Date Reported	05 Jul 2023

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:

Surrogate	PAH (Polynuclear Aromatic Hydrocarbons) in Water	1 item
Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Water	2 items

SAMPLE SUMMARY

Sample counts by matrix	2 Water	Type of documentation received	COC
Date documentation received	28/6/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	12.1°C
Sample container provider	SGS	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		

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 sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### 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
MW3	SE249903.001	LB284151	27 Jun 2023	28 Jun 2023	25 Jul 2023	03 Jul 2023	25 Jul 2023	04 Jul 2023
DUP_W	SE249903.002	LB284151	27 Jun 2023	28 Jun 2023	25 Jul 2023	03 Jul 2023	25 Jul 2023	04 Jul 2023

### 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
MW3	SE249903.001	LB283923	27 Jun 2023	28 Jun 2023	04 Jul 2023	28 Jun 2023	07 Aug 2023	04 Jul 2023
DUP_W	SE249903.002	LB283923	27 Jun 2023	28 Jun 2023	04 Jul 2023	28 Jun 2023	07 Aug 2023	04 Jul 2023

### 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
MW3	SE249903.001	LB283919	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	29 Jun 2023
DUP_W	SE249903.002	LB283919	27 Jun 2023	28 Jun 2023	24 Dec 2023	29 Jun 2023	24 Dec 2023	29 Jun 2023

### 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
MW3	SE249903.001	LB283923	27 Jun 2023	28 Jun 2023	04 Jul 2023	28 Jun 2023	07 Aug 2023	04 Jul 2023
DUP_W	SE249903.002	LB283923	27 Jun 2023	28 Jun 2023	04 Jul 2023	28 Jun 2023	07 Aug 2023	04 Jul 2023

### VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW3	SE249903.001	LB284127	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	11 Jul 2023	03 Jul 2023
DUP_W	SE249903.002	LB284127	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	11 Jul 2023	03 Jul 2023

### Volatile Petroleum Hydrocarbons in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW3	SE249903.001	LB284127	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	11 Jul 2023	03 Jul 2023
DUP_W	SE249903.002	LB284127	27 Jun 2023	28 Jun 2023	11 Jul 2023	30 Jun 2023	11 Jul 2023	03 Jul 2023

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

**PAH (Polynuclear Aromatic Hydrocarbons) in Water**

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	MW3	SE249903.001	%	40 - 130%	86
	DUP_W	SE249903.002	%	40 - 130%	41
d14-p-terphenyl (Surrogate)	MW3	SE249903.001	%	40 - 130%	123
	DUP_W	SE249903.002	%	40 - 130%	61
d5-nitrobenzene (Surrogate)	MW3	SE249903.001	%	40 - 130%	83
	DUP_W	SE249903.002	%	40 - 130%	40 Ⓞ

**VOCs in Water**

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	MW3	SE249903.001	%	40 - 130%	108
	DUP_W	SE249903.002	%	40 - 130%	105
d4-1,2-dichloroethane (Surrogate)	MW3	SE249903.001	%	40 - 130%	103
	DUP_W	SE249903.002	%	40 - 130%	102
d8-toluene (Surrogate)	MW3	SE249903.001	%	40 - 130%	108
	DUP_W	SE249903.002	%	40 - 130%	107

**Volatile Petroleum Hydrocarbons in Water**

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	MW3	SE249903.001	%	40 - 130%	108
	DUP_W	SE249903.002	%	40 - 130%	105
d4-1,2-dichloroethane (Surrogate)	MW3	SE249903.001	%	60 - 130%	103
	DUP_W	SE249903.002	%	60 - 130%	102
d8-toluene (Surrogate)	MW3	SE249903.001	%	40 - 130%	108
	DUP_W	SE249903.002	%	40 - 130%	107

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.

**Mercury (dissolved) in Water**

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

Sample Number	Parameter	Units	LOR	Result
LB284151.001	Mercury	mg/L	0.0001	<0.0001

**PAH (Polynuclear Aromatic Hydrocarbons) in Water**

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

Sample Number	Parameter	Units	LOR	Result
LB283923.001	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
	Surrogates	d5-nitrobenzene (Surrogate)	%	-
2-fluorobiphenyl (Surrogate)		%	-	48
d14-p-terphenyl (Surrogate)		%	-	67

**Trace Metals (Dissolved) in Water by ICPMS**

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

Sample Number	Parameter	Units	LOR	Result
LB283919.001	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 Water**

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

Sample Number	Parameter	Units	LOR	Result
LB283923.001	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

**VOCs in Water**

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

Sample Number	Parameter	Units	LOR	Result	
LB284127.001	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
		o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene (VOC)*	µg/L	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	100
		d8-toluene (Surrogate)	%	-	105
		Bromofluorobenzene (Surrogate)	%	-	94

**Volatile Petroleum Hydrocarbons in Water**

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

Sample Number	Parameter	Units	LOR	Result	
LB284127.001	TRH C6-C9	µg/L	40	<40	
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	100
		d8-toluene (Surrogate)	%	-	105
		Bromofluorobenzene (Surrogate)	%	-	94

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 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:  $MAD = 100 \times SDL / Mean + LR$   
 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 identifier 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 give a different calculated RPD.

Mercury (dissolved) in Water

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249988.012	LB284151.021	Mercury	µg/L	0.0001	-0.002	0	200	0

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %		
SE249895.002	LB283923.024	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	-	0.2	0.2	30	0
				2-fluorobiphenyl (Surrogate)	µg/L	-	0.3	0.3	30	2
d14-p-terphenyl (Surrogate)	µg/L			-	0.3	0.4	30	2		
SE249914.001	LB283923.023	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	-	0.3	0.2	30	27
				2-fluorobiphenyl (Surrogate)	µg/L	-	0.3	0.2	30	30 @
d14-p-terphenyl (Surrogate)	µg/L			-	0.3	0.2	30	35 @		

Trace Metals (Dissolved) in Water by ICPMS

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249915.002	LB283919.014	Arsenic	µg/L	1	1	1	84	0
		Cadmium	µg/L	0.1	0.2	0.2	62	24
		Chromium	µg/L	1	<1	<1	200	0
		Copper	µg/L	1	1	2	67	58
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	<1	<1	157	0
		Zinc	µg/L	5	200	200	17	2
SE249915.010	LB283919.023	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	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 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:  $MAD = 100 \times SDL / Mean + LR$   
 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 identifier 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 give a different calculated RPD.

Trace Metals (Dissolved) in Water by ICPMS (continued)

Method: ME-(AU)-ENVJAN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249915.010	LB283919.023	Copper	µg/L	1	<1	<1	200	0
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	<1	<1	200	0
		Zinc	µg/L	5	<5	<5	200	0

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-ENVJAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE249895.002	LB283923.024	TRH C10-C14	µg/L	50	<50	<50	200	0
		TRH C15-C28	µg/L	200	<200	<200	200	0
		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	<650	<650	200	0
		TRH F Bands						
		TRH >C10-C16	µg/L	60	<60	<60	200	0
		TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	200	0
		TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0
		TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0
SE249914.001	LB283923.023	TRH C10-C14	µg/L	50	80	55	104	38
		TRH C15-C28	µg/L	200	210	<200	139	4
		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	<650	<650	141	2
		TRH F Bands						
		TRH >C10-C16	µg/L	60	91	61	109	39
		TRH >C10-C16 - Naphthalene (F2)	µg/L	60	91	61	109	39
		TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0
		TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0

VOCs in Water

Method: ME-(AU)-ENVJAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE250044.016	LB284127.027	Monocyclic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
		Aromatic	Toluene	µg/L	0.5	<0.5	<0.5	200	0
			Ethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
			m/p-xylene	µg/L	1	<1	<1	200	0
			o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11	9.9	30	7
			d8-toluene (Surrogate)	µg/L	-	10	8.2	30	24
			Bromofluorobenzene (Surrogate)	µg/L	-	10	9.0	30	15
		Totals	Total BTEX	µg/L	3	<3	<3	200	0
SE250068.001	LB284127.026	Monocyclic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
		Aromatic	Toluene	µg/L	0.5	<0.5	<0.5	200	0
			Ethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
			m/p-xylene	µg/L	1	<1	<1	200	0
			o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10	9.6	30	5
			d8-toluene (Surrogate)	µg/L	-	10	8.1	30	24
			Bromofluorobenzene (Surrogate)	µg/L	-	11	9.0	30	15
		Totals	Total BTEX	µg/L	3	<3	<3	200	0

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-ENVJAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE250044.016	LB284127.027	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	9.9	30	7
			d8-toluene (Surrogate)	µg/L	-	10	8.2	30	24
			Bromofluorobenzene (Surrogate)	µg/L	-	10	9.0	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
SE250068.001	LB284127.026	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	9.6	30	5
			d8-toluene (Surrogate)	µg/L	-	10	8.1	30	24

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$   
 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:  $MAD = 100 \times SDL / Mean + LR$   
 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 identifier 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 give a different calculated RPD.

Volatile Petroleum Hydrocarbons in Water (continued)

Method: ME-(AU)-ENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE250068.001	LB284127.026	Surrogates	Bromofluorobenzene (Surrogate)	µg/L	-	11	9.0	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.

**PAH (Polynuclear Aromatic Hydrocarbons) in Water**

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB283923.002	Naphthalene	µg/L	0.1	40	40	60 - 140	100	
	Acenaphthylene	µg/L	0.1	37	40	60 - 140	91	
	Acenaphthene	µg/L	0.1	35	40	60 - 140	86	
	Phenanthrene	µg/L	0.1	35	40	60 - 140	88	
	Anthracene	µg/L	0.1	35	40	60 - 140	87	
	Fluoranthene	µg/L	0.1	37	40	60 - 140	93	
	Pyrene	µg/L	0.1	40	40	60 - 140	100	
	Benzo(a)pyrene	µg/L	0.1	37	40	60 - 140	93	
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.2	0.5	40 - 130	47
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.2	0.5	40 - 130	43
d14-p-terphenyl (Surrogate)		µg/L	-	0.2	0.5	40 - 130	47	

**Trace Metals (Dissolved) in Water by ICPMS**

Method: ME-(AU)-[ENV]JAN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB283919.002	Arsenic	µg/L	1	21	20	80 - 120	106
	Cadmium	µg/L	0.1	21	20	80 - 120	105
	Chromium	µg/L	1	19	20	80 - 120	97
	Copper	µg/L	1	19	20	80 - 120	97
	Lead	µg/L	1	20	20	80 - 120	98
	Nickel	µg/L	1	21	20	80 - 120	104
	Zinc	µg/L	5	19	20	80 - 120	97

**TRH (Total Recoverable Hydrocarbons) in Water**

Method: ME-(AU)-[ENV]JAN403

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB283923.002	TRH C10-C14	µg/L	50	1000	1200	60 - 140	87	
	TRH C15-C28	µg/L	200	1300	1200	60 - 140	105	
	TRH C29-C36	µg/L	200	1200	1200	60 - 140	97	
	TRH F Bands	TRH >C10-C16	µg/L	60	1200	1200	60 - 140	97
		TRH >C16-C34 (F3)	µg/L	500	1200	1200	60 - 140	104
		TRH >C34-C40 (F4)	µg/L	500	570	600	60 - 140	95

**VOCs in Water**

Method: ME-(AU)-[ENV]JAN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB284127.002	Monocyclic	Benzene	µg/L	0.5	50	45.45	60 - 140	110
		Aromatic	Toluene	µg/L	0.5	50	45.45	60 - 140
	Ethylbenzene		µg/L	0.5	50	45.45	60 - 140	110
	m/p-xylene		µg/L	1	100	90.9	60 - 140	110
	o-xylene		µg/L	0.5	50	45.45	60 - 140	110
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.8	10	60 - 140	98
		d8-toluene (Surrogate)	µg/L	-	11.4	10	70 - 130	114
		Bromofluorobenzene (Surrogate)	µg/L	-	11.5	10	70 - 130	115

**Volatile Petroleum Hydrocarbons in Water**

Method: ME-(AU)-[ENV]JAN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB284127.002	TRH C6-C10	µg/L	50	910	946.63	60 - 140	96	
	TRH C6-C9	µg/L	40	790	818.71	60 - 140	96	
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.8	10	60 - 140	98
		d8-toluene (Surrogate)	µg/L	-	11.4	10	70 - 130	114
		Bromofluorobenzene (Surrogate)	µg/L	-	11.5	10	70 - 130	115
		VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	610	639.67	60 - 140



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 identifier 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(Pørth)/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249903.001	LB284151.004	Mercury	mg/L	0.0001	0.0018	<0.0001	0.008	89

Trace Metals (Dissolved) in Water by ICPMS

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE249888.001	LB283919.004	Lead	µg/L	1	21	<1	20	104

VOCs in Water

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE249755.001	LB284127.028	Monocyclic	Benzene	µg/L	0.5	58	<0.5	45.45	127
		Aromatic	Toluene	µg/L	0.5	58	<0.5	45.45	128
			Ethylbenzene	µg/L	0.5	51	<0.5	45.45	111
			m/p-xylene	µg/L	1	100	<1	90.9	111
			o-xylene	µg/L	0.5	51	<0.5	45.45	113
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	57	<0.5	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.8	10.4	-	98
			d8-toluene (Surrogate)	µg/L	-	10	10.7	-	102
			Bromofluorobenzene (Surrogate)	µg/L	-	10	10.4	-	100
		Totals	Total BTEX	µg/L	3	320	<3	-	-

Volatile Petroleum Hydrocarbons in Water

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE249755.001	LB284127.028	TRH C6-C10	µg/L	50	<50	<50	946.63	108	
			µg/L	40	<40	<40	818.71	108	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	0.0	10.4	-	98
			d8-toluene (Surrogate)	µg/L	-	0.0	10.7	-	102
			Bromofluorobenzene (Surrogate)	µg/L	-	0.0	10.4	-	100
		VPH F	Benzene (F0)	µg/L	0.5	<0.5	<0.5	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	639.67	110

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

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:  $MAD = 100 \times SDL / Mean + LR$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

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](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.

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### CHAIN OF CUSTODY & ANALYSIS REQUEST

**SGS Environmental Services**  
 Unit 16, 33 Maddox Street  
 Alexandria NSW 2015  
 Telephone No: (02) 85940400  
 Facsimile No: (02) 85940499  
 Email: au.samplerreceipt.sydney@sgs.com

Company Name:	Hunter Environmental Consulting	Project Name/No:	E0076 (Gaol)
Address:	40 Glenwood Drive, Thornton NSW 2322	Purchase Order No:	HEC0178
Contact Name:	Lauren Kidd/Jake Duck	Results Required By:	Sfd
		Telephone:	JD: 0499 160 449
		Facsimile:	
		Email Results:	results@hunterenviro.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS														
BH1 0.1-0.2	19.6.23	1		X		1	X	X												
BH2 0.2-0.3		2		X		1	X	X												
BH2 1.1-1.2		3		X		1	X	X												
BH2 1.6-1.7				X		1														
BH3 0.2-0.3		4		X		1														
BH3 1.4-1.5		5		X		1	X													
BH3 3.0-3.1		6		X		1	X													
BH4 0.1-0.2		7		X		1														
BH4 1.0-1.1		8		X		1	X													

SGS EHS Sydney COC  
**SE249506**



Relinquished By:	Date/Time: 20.6.23	Received By: <i>P. Barry</i>	Date/Time: 21/06/23 @11.05
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: <u>Yes</u> / No	Temperature: Ambient / <u>Chilled</u>	Sample Cooler Sealed: Yes / No	Laboratory Quotation No:
Comments:			



### CHAIN OF CUSTODY & ANALYSIS REQUEST

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 Unit 16, 33 Maddox Street  
 Alexandria NSW 2015  
 Telephone No: (02) 85940400  
 Facsimile No: (02) 85940499  
 Email: au.samplerreceipt.sydney@sgs.com

Company Name: Hunter Environmental Consulting	Project Name/No: E0076 (Gaal)
Address: 40 Glenwood Drive, Thornton NSW 2322	Purchase Order No: <u>HECO178</u>
Contact Name: Lauren Kidd/Jake Duck	Results Required By: <u>Std</u>
	Telephone: JD: 0499 160 449
	Facsimile:
	Email Results: <u>results@hunterenviro.com.au</u>

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS															
BH5 0.1-0.2	19.6.23	9		X		1		CL10		X											
BH5 0.7-0.8	↓	10		X		1	X														
BH5 1.3-1.4		11		X		1	X														
BH6 0.1-0.2		12		X		1		X													
BH6 0.8-0.9		13		X		1	X														
BH6 1.6-1.7				X		1															X
BH7 0.1-0.2		14		X		1		X		X											
BH7 1.2-1.3		15		X		1		X													
BH7 2.8-2.9		16		X		1	X														

Relinquished By:	Date/Time: <u>20.6.23</u>	Received By: <u>[Signature]</u>	Date/Time: <u>21/06/23 @ 11.05</u>
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Temperature: Ambient / <input checked="" type="radio"/> Chilled	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No:

Comments:



### CHAIN OF CUSTODY & ANALYSIS REQUEST

**SGS Environmental Services**  
 Unit 16, 33 Maddox Street  
 Alexandria NSW 2015  
 Telephone No: (02) 85940400  
 Facsimile No: (02) 85940499  
 Email: au.samplereceipt.sydney@sgs.com

Company Name: Hunter Environmental Consulting	Project Name/No: E0076 (Gael)
Address: 40 Glenwood Drive, Thornton NSW 2322	Purchase Order No: <u>HE0178</u>
Contact Name: Lauren Kidd/Jake Duck	Results Required By: <u>std</u>
	Telephone: JD: 0499 160 449
	Facsimile:
	Email Results: results@hunterenviro.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS														
							CL10	CL17	ASB ID	CLS	HOLD									
BH8 0.2-0.3	19.6.23	17		X		1	X													
BH8 0.6-0.7	↓	18		X		1	X													
BH8 2.9-3.0		19		X		1														
BH9 0.2-0.3		20		X		1	X													
BH9 0.7-0.8		21		X		1	X													
BH9 1.4-1.5		22		X		1	X													
BH10 0.1-0.2		22		X		1	X													
BH10 0.3-0.4		22		X		1	X													
BH10 1.0-1.1		24		X		1	X													

Relinquished By:	Date/Time: <u>20.6.23</u>	Received By: <u>B. Rubany</u>	Date/Time: <u>21/06/23 @ 11.05</u>
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: <u>Yes</u> /No	Temperature: Ambient / <u>Chilled</u>	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No:
Comments:			



### CHAIN OF CUSTODY & ANALYSIS REQUEST

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 Unit 16, 33 Maddox Street  
 Alexandria NSW 2015  
 Telephone No: (02) 85940400  
 Facsimile No: (02) 85940499  
 Email: au.samplerreceipt.sydney@sgs.com

Company Name: Hunter Environmental Consulting Project Name/No: E0076 (Gaol)  
 Address: 40 Glenwood Drive, Thornton NSW 2322 Purchase Order No: HECO178  
 Results Required By: STD  
 Contact Name: Lauren Kidd/Jake Duck Telephone: JD: 0499 160 449  
 Facsimile: \_\_\_\_\_  
 Email Results: results@hunterenviro.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS														
BH11 0.2-0.3	19.6.23	25		X		1		CL10												
BH11 0.7-0.8		26		X		1		CL15												
BH11 1.1-1.2		27		X		1	X	ASB ID												
BH12 0.2-0.3		28		X		1	X	CLS												
BH12 0.7-0.8		29		X		1	X	HOLD												
BH12 2.2-2.3		30		X		1	X													
BH13 0.1-0.2		31		X		1	X													
BH13 2.7-2.8				X		1														
BH14 0.2-0.3		32		X		1	X													

Relinquished By:	Date/Time: <u>20.6.23</u>	Received By: <u>[Signature]</u>	Date/Time: <u>21/06/23 @ 11.05</u>
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: <u>Yes</u> No	Temperature: Ambient / <u>Chilled</u>	Sample Cooler Sealed: Yes / No	Laboratory Quotation No:
Comments:			



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 Alexandria NSW 2015  
 Telephone No: (02) 85940400  
 Facsimile No: (02) 85940499  
 Email: au.samplerreceipt.sydney@sgs.com

Company Name: Hunter Environmental Consulting      Project Name/No: E0076 (Gaul)  
 Address: 40 Glenwood Drive, Thornton NSW 2322      Purchase Order No: HECO178  
 Results Required By: Std  
 Contact Name: Lauren Kidd/Jake Duck      Telephone: JD: 0499 160 449  
 Facsimile:  
 Email Results: results@hunterenviro.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL10	CL17	ASB ID	CLS	HOLD
BH14 2.5-2.6	19.6.23			X		1					X
BH15 0.2-0.3	↓	33		X		1		X			
BH15 1.3-1.4		34		X		1	X				
BH16 0.2-0.3		35		X		1	X				
BH16 1.7-1.8		36		X		1	X				
DUP1		37		X		1	X				
DUP2		38		X		1	X				
TRIP1		<del>39</del>		X		1	X				
RINS1		39	X			1	X				

Relinquished By: \_\_\_\_\_ Date/Time: 20.6.23      Received By: [Signature]      Date/Time: 21/06/23 @11.05  
 Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_      Received By: \_\_\_\_\_      Date/Time: \_\_\_\_\_  
 Samples Intact:  Yes /  No      Temperature: Ambient /  Chilled      Sample Cooler Sealed: Yes/ No      Laboratory Quotation No: \_\_\_\_\_

Comments: TRIP1 - please send to external lab.





### CHAIN OF CUSTODY & ANALYSIS REQUEST

**SGS Environmental Services**  
 Unit 16, 33 Maddox Street  
 Alexandria NSW 2015  
 Telephone No: (02) 85940400  
 Facsimile No: (02) 85940499  
 Email: [au.samplerreceipt.sydney@sgs.com](mailto:au.samplerreceipt.sydney@sgs.com)

Company Name: Hunter Environmental Consulting Project Name/No: E0076 (Gaal)  
 Address: 40 Glenwood Drive, Thornton NSW 2322 Purchase Order No: HEC0178  
 Results Required By: Std  
 Contact Name: Lauren Kidd/Jake Duck Telephone: JD: 0499 160 449  
 Facsimile: \_\_\_\_\_  
 Email Results: results@hunterenviro.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS														
<u>Trip Spike/blank</u>	<u>19.6.23</u>	<u>40/41</u>		<u>X</u>		<u>2</u>	<u>C10</u>	<u>C17</u>	<u>ASB ID</u>	<u>X</u>										

Relinquished By: \_\_\_\_\_ Date/Time: 20.6.23 Received By: [Signature] Date/Time: 21/06/23 @ 11.05  
 Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Samples Intact: Yes / No Temperature: Ambient / Chilled Sample Cooler Sealed: Yes/ No Laboratory Quotation No: \_\_\_\_\_  
 Comments: \_\_\_\_\_



### CHAIN OF CUSTODY & ANALYSIS REQUEST

**SGS Environmental Services**  
 Unit 16, 33 Maddox Street  
 Alexandria NSW 2015  
 Telephone No: (02) 85940400  
 Facsimile No: (02) 85940499  
 Email: au.samplereceipt.sydney@sgs.com

Company Name:	Hunter Enviro	Project Name/No:	E0076 (Gael)
Address:	3/62 Sandringham Avenue Thornton 2322	Purchase Order No:	HEC0183
		Results Required By:	Std
Contact Name:	Jake	Telephone:	0499 160 449
		Facsimile:	
		Email Results:	id@hunterenviro.com.au ; results@hunterenviro.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS																																			
MW3	27/6	1	X			4	X	X																																	
DUP-W	27/6	2	X			4	X																																		

SGS EHS Sydney COC  
**SE249903**

Relinquished By:	Date/Time: 27/6/2023	Received By:	Date/Time: 28/6/23 11:50
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Temperature: Ambient <input checked="" type="radio"/> Chilled	Sample Cooler Sealed: <input checked="" type="radio"/> Yes <input type="radio"/> No	Laboratory Quotation No:
Comments: filter for metals please (both)			



# Annex J

## Multi Parameter Water Meter



airmet

Air-Met Scientific Pty Ltd  
1300 137 067Instrument **YSI Quatro Pro Plus**  
Serial No. **18J104330**

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

**Certificate of bump test**

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
2. pH 7.00		pH 7.00		399304	pH 7.02
3. pH 4.00		pH 4.00		399527	pH 4.0
4. mV		238.46 mV		A393379/B398193	238.6mV
5. EC		2760 mS		401089	2762mS
6. D.O		0.00%		12110	-0.10%
7. Temp		20.7°C		MultiTherm	20.7°C

Calibrated by:

Guido Camera

Calibration date:

22/06/2023

Next calibration due:

22/07/2023

## Oil / Water Interface Meter

Instrument **Interface Meter (30M)**  
 Serial No. **483925**



**airmet**

Air-Met Scientific Pty Ltd  
 1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	
	I.S.	✓	

### Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by:

Guido Camera

Calibration date:

23/06/2023

Next calibration due:

22/08/2023